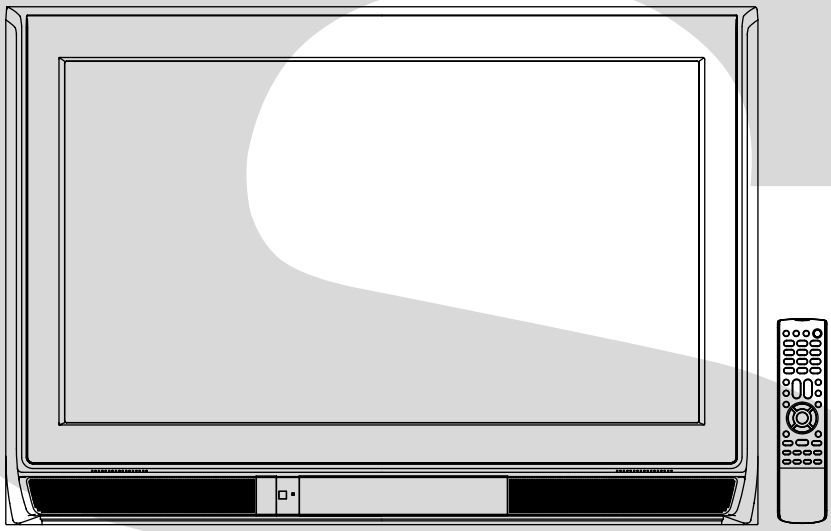
TOSHIBA

FILE NO. 050-200621GR
(MFR'S VERSION A)

SERVICE MANUAL

COLOR TELEVISION

30DF56



The above model is classified as a green product (*1), as indicated by the underlined serial number. This Service Manual describes replacement parts for the green product. When repairing this green product, use the part(s) described in this manual and lead-free solder (*2).

For (*1) and (*2), see the next page.

DOCUMENT CREATED IN JAPAN, June, 2006 GREEN

(*1) GREEN PRODUCT PROCUREMENT

The EC is actively promoting the WEEE & RoHS Directives that define standards for recycling and reuse of Waste Electrical and Electronic Equipment and for the Restriction of the use of certain Hazardous Substances. From July 1, 2006, the RoHS Directive will prohibit any marketing of new products containing the restricted substances.

Increasing attention is given to issues related to the global environmental. Toshiba Corporation recognizes environmental protection as a key management tasks, and is doing its utmost to enhance and improve the quality and scope of its environmental activities. In line with this, Toshiba proactively promotes Green Procurement, and seeks to purchase and use products, parts and materials that have low environmental impacts.

Green procurement of parts is not only confined to manufacture. The same green parts used in manufacture must also be used as replacement parts.

(*2) LEAD-FREE SOLDER

This product is manufactured using lead-free solder as a part of a movement within the consumer products industry at large to be environmentally responsible. Lead-free solder must be used in the servicing and repair of this product.

WARNING

This product is manufactured using lead free solder.

DO NOT USE LEAD BASED SOLDER TO REPAIR THIS PRODUCT !

The melting temperature of lead-free solder is higher than that of leaded solder by 86°F to 104°F (30°C to 40°C). Use of a soldering iron designed for lead-based solders to repair product made with lead-free solder may result in damage to the component and or PCB being soldered. Great care should be made to ensure high-quality soldering when servicing this product — especially when soldering large components, through-hole pins, and on PCBs — as the level of heat required to melt lead-free solder is high.

SERVICING NOTICES ON CHECKING

1. KEEP THE NOTICES

As for the places which need special attentions, they are indicated with the labels or seals on the cabinet, chassis and parts. Make sure to keep the indications and notices in the operation manual.

2. AVOID AN ELECTRIC SHOCK

There is a high voltage part inside. Avoid an electric shock while the electric current is flowing.

3. USE THE DESIGNATED PARTS

The parts in this equipment have the specific characters of incombustibility and withstand voltage for safety. Therefore, the part which is replaced should be used the part which has the same character.
Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts as a ⚠ mark, the designated parts must be used.

4. PUT PARTS AND WIRES IN THE ORIGINAL POSITION AFTER ASSEMBLING OR WIRING

There are parts which use the insulation material such as a tube or tape for safety, or which are assembled in the condition that these do not contact with the printed board. The inside wiring is designed not to get closer to the pyrogenic parts and high voltage parts. Therefore, put these parts in the original positions.

5. TAKE CARE TO DEAL WITH THE CATHODE-RAY TUBE

In the condition that an explosion-proof cathode-ray tube is set in this equipment, safety is secured against implosion. However, when removing it or serving from backward, it is dangerous to give a shock. Take enough care to deal with it.

6. AVOID AN X-RAY

Safety is secured against an X-ray by considering about the cathode-ray tube and the high voltage peripheral circuit, etc.
Therefore, when repairing the high voltage peripheral circuit, use the designated parts and make sure not modify the circuit.
Repairing except indicates causes rising of high voltage, and it emits an X-ray from the cathode-ray tube.

7. PERFORM A SAFETY CHECK AFTER SERVICING

Confirm that the screws, parts and wiring which were removed in order to service are put in the original positions, or whether there are the portions which are deteriorated around the serviced places serviced or not. Check the insulation between the antenna terminal or external metal and the AC cord plug blades. And be sure the safety of that.

(INSULATION CHECK PROCEDURE)

1. Unplug the plug from the AC outlet.
2. Remove the antenna terminal on TV and turn on the TV.
3. Insulation resistance between the cord plug terminals and the eternal exposure metal **[Note 2]** should be more than 1M ohm by using the 500V insulation resistance meter **[Note 1]**.
4. If the insulation resistance is less than 1M ohm, the inspection repair should be required.

[Note 1]

If you have not the 500V insulation resistance meter, use a Tester.

[Note 2]

External exposure metal: Antenna terminal
Headphone jack

HOW TO ORDER PARTS

Please include the following informations when you order parts. (Particularly the VERSION LETTER.)

1. MODEL NUMBER and VERSION LETTER
   The MODEL NUMBER can be found on the back of each product and the VERSION LETTER can be found at the end of the SERIAL NUMBER.
2. PART NO. and DESCRIPTION
   You can find it in your SERVICE MANUAL.

IMPORTANT

When you exchange IC and Transistor with a heat sink, apply silicon grease on the contact section of the heat sink. Befor applying new silicon grease, remove all the old silicon grease. (Old grease may cause damages to the IC and Transistor.)

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GENERAL SPECIFICATIONS

G-1	**TV System**	CRT	CRT Size / Visual Size	30 inch / 760mmV
			CRT Type	Flat (16:9)
			Magnetic Field BV/BH	+0.45G/0.18G
		Color System		NTSC
		Display Capability		480i
		Speaker		2 Speaker
			Position	Front
			Size	1.8 x 3.9 Inch
			Impedance	8 ohm
		Sound Output	MAX	2.5W+2.5W
			10%(Typical)	- W
		NTSC3.58+4.43 /PAL60Hz		No
G-2	**Tuning System**	Broadcasting System	Analog	US System M
			Digital	ATSC(8VSB)/QAM
		Tuner and	System	1Tuner
		Receive CH	Destination	USA(W/ CABLE)
		CH Coverage		2 - 69, 4A, A-5 - A-1, A - I, J - W, W+1 - W+84
		Intermediate	Digital	44.00MHz
		Frequency	Analog Picture(FP)	45.75MHz
			Sound(FS)	41.25MHz
			FP-FS	4.50MHz
		Preset CH		No
		Stereo/Dual TV Sound		Yes
		Tuner Sound Muting		Yes
G-3	**Power**	Power Source	AC	120V AC 60Hz
			DC	
		Power Consumption	at AC	
				155 W at AC 120 V 60 Hz
			Stand by (at AC)	3 W at AC 120 V 60 Hz
			Per Year	-- kWh/Year
		Energy Star		No
		Protector	Power Fuse	Yes
			Safety Circuit	Yes
			IC Protector(Micro Fuse)	Yes
G-4	**Regulation**		Safety	UL
			Radiation	FCC
			X-Radiation	DHHS
G-5	**Temperature**		Operation	+5oC ~ +40oC
			Storage	-20oC ~ +60oC
G-6	**Operating Humidity**			Less than 80% RH
G-7	**OSD Language**			English French Spanish
G-8	**Clock and Timer**	Clock		Yes
		Sleep Timer	Max Time	120 Min
			Step	10 Min
		On Timer/Off Timer	Program	Yes(1 Program)
		Game Timer		Yes
		Wake Up Timer		No
		Timer Back-up (at Power Off Mode)	more than	-- Min Sec

GENERAL SPECIFICATIONS

G-9	**Remote Control**	Unit		RC-KK
		Glow in Dark Remocon		Yes
		Remocon Format		TOSHIBA
		Format		TOSHIBA
		Custom Code		40-BF h
		Power Source	Voltage(D.C)	3V
			UM size x pcs	UM-4 x 2 pcs
		Total Keys		44
		Keys	Power	Yes
			TV/VIDEO	Yes
			Recall	Yes
			Mute	Yes
			1	Yes
			2	Yes
			3	Yes
			4	Yes
			5	Yes
			6	Yes
			7	Yes
			8	Yes
			9	Yes
			0	Yes
			100 / +10	Yes
			CH Return / Ent	Yes
			CH +	Yes
			CH -	Yes
			VOL +	Yes
			VOL -	Yes
			SLEEP	Yes
			Picture Size	Yes
			UP	Yes
			LEFT / FAV -	Yes
			MENU/ENTER/DVD MENU	Yes
			RIGHT / FAV +	Yes
			DOWN	Yes
			EXIT	Yes
		Multi Brand Keys	TV	Yes
			CBL/SAT	Yes
			VCR	Yes
			DVD	Yes
			ENTER	Yes
			PAUSE	Yes
			PLAY	Yes
			STOP	Yes
			REW	Yes
			FF	Yes
			SKIP/SEARCH|<<	Yes
			SKIP/SEARCH>>|	Yes
			TOP MENU	Yes
			REC	Yes
			CLEAR	Yes
			TV/VCR	Yes

GENERAL SPECIFICATIONS

G-10	**Features**	Picture	Brightness, Contrast, Color, Tint, Sharpness		Yes
			Mode (Picture preference)		No
			Color Temperature		No
		Audio	MTS		Yes
			Tone Control (Bass, Treble, Balance)		Yes
			Surround		Yes
			Stable Sound		Yes
			BBE		No
			SRS WOW(SRS 3D/Focus/Tru Bass)		No
			Variable Audio Out		No
		Tuning	TV/CABLE		Yes
			CH Program		Yes
			Add/ Delete		Yes
		Label	CH Label		Yes
			Video Label		No
		Favorite CH			Yes
		Lock	Hotel Lock		No
			Channel Lock		Yes
			Video Lock		Yes
			Panel Lock		Yes
		Auto Shut Off			Yes
		Auto Setup			Yes
		Power On Memory			Yes
		V-Chip			Yes
			Type		USA, ORION Type
		RRT			Yes
		Image Tilt			Yes
		SVM Circuit			Yes
		Comb Filter			Yes 3 -Lines
		Cable Clear			No
		Cinema Mode			No
		Display Format			No
		Aspect			No
		Closed Caption			Yes
		CC Advance			Yes
		Picture Size			Yes
		Picture Scroll			Yes
		FBT Leak Test Protect			Yes
		Menu=Volume Up+Volume Down			Yes
		POD (Point Of Deployment)			No
		TV Guide (EPG)			No
		Digital Out		Dolby Digital	Yes
				MPEG	No
				PCM	Yes
				DTS	No
		HDMI Input			No
		Component Input			Yes
				720x480i (4:3)	Yes (60Hz)
				720x480i (16:9)	Yes (60Hz)
				720x480p (4:3)	No
				720x480p (16:9)	No
				720x576i (4:3)	No
				720x576i (16:9)	No
				720x576p (4:3)	No
				720x576p (16:9)	No
				1280x720p	No
				1920x1080i	No

GENERAL SPECIFICATIONS

G-11	**Accessories**	Owner's Manual		Language	English / Spanish
				W/ Warranty	Yes
		Remote Control Unit			Yes
		Rod Antenna			No
				Poles	
				Terminal	
		Loop Antenna			No
				Terminal	-
		U/V Mixer			No
		DC Car Cord (Center+)			No
		Guarantee Card			No
		Warning Sheet			No
		Circuit Diagram			No
		Antenna Change Plug			No
		Service Station List			No
		Important Safety Instruction			No
		Dew/AHC Caution Sheet			No
		AC Plug Adapter			No
		Quick Set-up Sheet			No
		Battery			Yes
				UM size x pcs	UM-4 x 2 pcs
				OEM Brand	No
		AC Cord			No
		AV Cord (2Pin-1Pin)			No
		Registration Card (NDL Card)			Yes
		PTB Sheet			No
		ESP Card			No
		300 ohm to 75 ohm Antenna Adapter			No
		Information Sheet(for HDMI)			No
		Information Sheet(Channel)			Yes
		Information Sheet(RRT)			Yes
		Sheet Information(RETURN)			No
G-12	**Interface**	Switch	Front	Power	Yes
				Channel Up/Menu Up	Yes
				Channel Down/Menu Down	Yes
				Volume Up/Menu Right	Yes
				Volume Down/Menu Left	Yes
		Indicator		Power	Yes(RED)
				Stand-by	No
				On Timer	No
		Terminals	Front	Video Input = VIDEO2	RCA
				Audio Input = VIDEO2	RCA x 2 (L/MONO,R)
				S Input = VIDEO2	No
				Other Terminal	No
			Rear	Video Input(Rear1) = VIDEO1	RCA
				Video Input(Rear2)	No
				S Input(Rear1) = VIDEO1	Yes
				S Input(Rear2)	No
				Audio Input(Rear1) = VIDEO1	RCA x 2 (L/MONO,R)
				Audio Input(Rear2)	No
				Video Output	No
				Audio Output	RCA x 2 (L/MONO,R)
				Component Input1(w/ Analog Audio L/R)	RCA x 5 (L/MONO,R)
				Component Input2(w/ Analog Audio L/R)	No
				HDMI Input1(w/ Analog Audio L/R)	No
				HDMI Input2(w/ Analog Audio L/R)	No
				Digital Audio Out	Coaxial x 1
				Cable Card Slot	No
				IR Blaster	No
				VHF/UHF Antenna Input	F Type
				AC Outlet	No
G-13	**Set Size**			Approx. W x D x H (mm)	796 x 563 x 549.2
G-14	**Weight**			Net (Approx.)	51.0 kg (112.5 lbs)
				Gross (Approx.)	58.0kg (127.9lbs)

GENERAL SPECIFICATIONS

G-15	**Carton**	Master Carton		No
			Content	---- Sets
			Material	-- /--
			Dimensions W x D x H(mm)	-- x -- x --
			Description of Origin	No
		Gift Box	Material	Double/Brown
			Dimensions W x D x H(mm)	916 x 691 x 711
			Description of Origin	Yes
		Drop Test		Natural Dropping At 1 Corner / 2 Edges / 4 Surfaces
			Height (cm)	40 (ORION SPEC:25)
		Container Stuffing		129 Sets/40' container
G-16	**Material**	Cabinet	Cabinet Front	PS 94V0 DECABROM
			Cabinet Rear	PS 94V0 NON-DECABROM
		PCB	Non-Halogen Demand	No
			Eyelet Demand	Yes
G-17	**Environment**	Environmental standard requirement (by buyer)		Green procurement of TOSHIBA
		Pb-free		Phase3(Phase3A)
			Measures for Whisker	Yes

DISASSEMBLY INSTRUCTIONS

1. REMOVAL OF ANODE CAP

Read the following **NOTED** items before starting work.

* After turning the power off there might still be a potential voltage that is very dangerous. When removing the Anode Cap, make sure to discharge the Anode Cap's potential voltage.
* Do not use pliers to loosen or tighten the Anode Cap terminal, this may cause the spring to be damaged.

REMOVAL

1. Follow the steps as follows to discharge the Anode Cap. **(Refer to Fig. 1-1.)**
   Connect one end of an Alligator Clip to the metal part of a flat-blade screwdriver and the other end to ground.
   While holding the plastic part of the insulated Screwdriver, touch the support of the Anode with the tip of the Screwdriver.
   A cracking noise will be heard as the voltage is discharged.

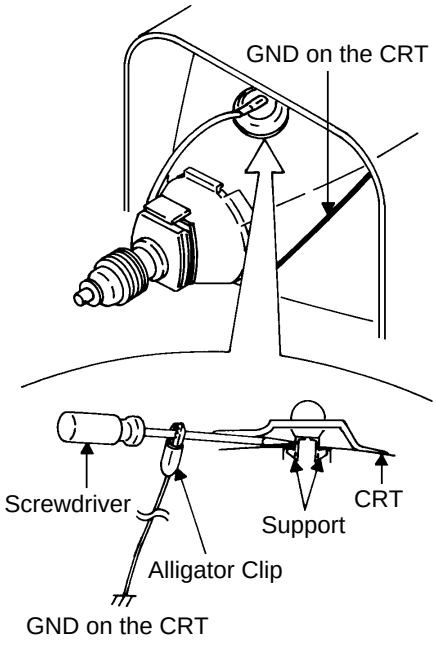


Fig. 1-1

2. Flip up the sides of the Rubber Cap in the direction of the arrow and remove one side of the support. **(Refer to Fig. 1-2.)**

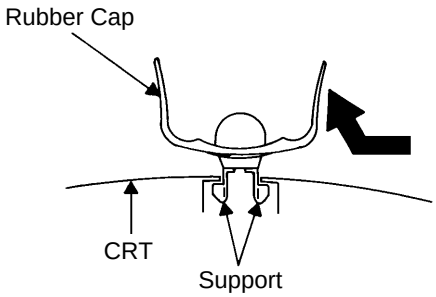


Fig. 1-2

3. After one side is removed, pull in the opposite direction to remove the other.

NOTE

Take care not to damage the Rubber Cap.

INSTALLATION

1. Clean the spot where the cap was located with a small amount of alcohol. **(Refer to Fig. 1-3.)**

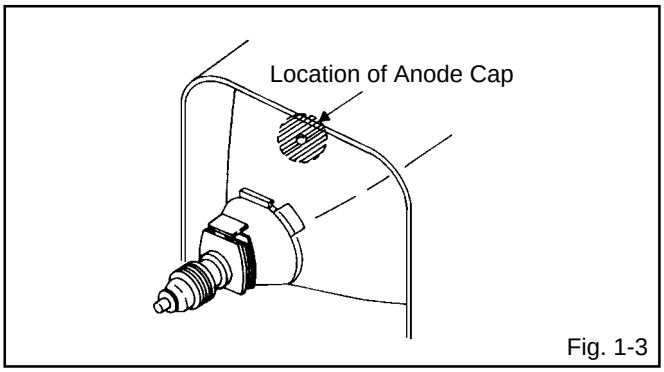


Fig. 1-3

NOTE

Confirm that there is no dirt, dust, etc. at the spot where the cap was located.

2. Arrange the wire of the Anode Cap and make sure the wire is not twisted.
3. Turn over the Rubber Cap. **(Refer to Fig. 1-4.)**

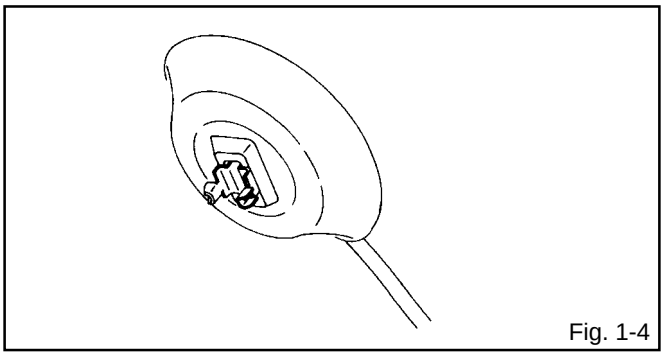


Fig. 1-4

4. Insert one end of the Anode Support into the anode button, then the other as shown in **Fig. 1-5**.

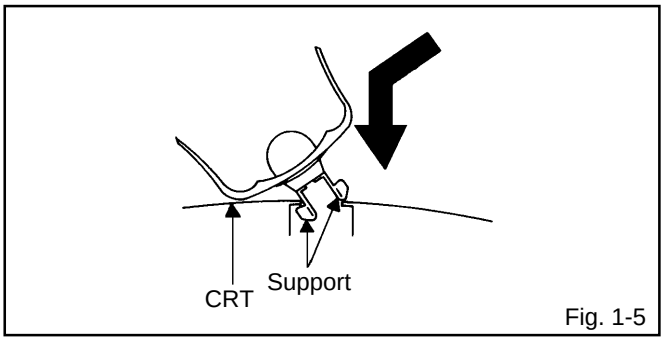


Fig. 1-5

5. Confirm that the Support is securely connected.
6. Put on the Rubber Cap without moving any parts.

DISASSEMBLY INSTRUCTIONS

2. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

REMOVAL

1. Put the Masking Tape (cotton tape) around the Flat Package IC to protect other parts from any damage. **(Refer to Fig. 2-1.)**

   NOTE

   Masking is carried out on all the parts located within 10 mm distance from IC leads.

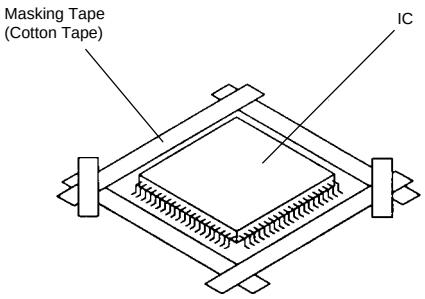


Fig. 2-1

2. Heat the IC leads using a blower type IC desoldering machine. **(Refer to Fig. 2-2.)**

   NOTE

   Do not add the rotating and the back and forth directions force on the IC, until IC can move back and forth easily after desoldering the IC leads completely.

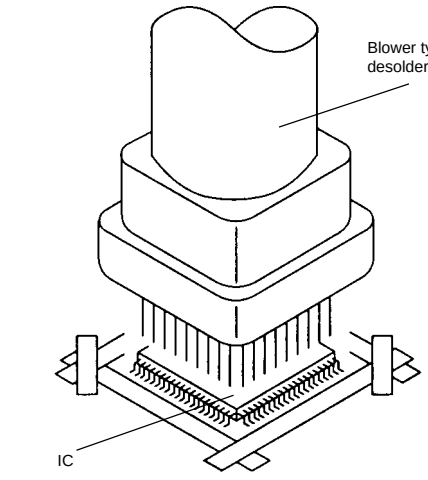


Fig. 2-2

3. When IC starts moving back and forth easily after desoldering completely, pickup the corner of the IC using a tweezers and remove the IC by moving with the IC desoldering machine. **(Refer to Fig. 2-3.)**

   NOTE

   Some ICs on the PCB are affixed with glue, so be careful not to break or damage the foil of each IC leads or solder lands under the IC when removing it.

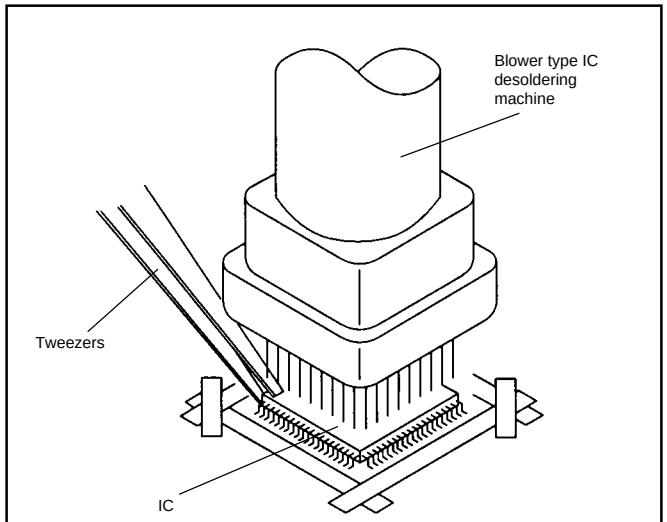


Fig. 2-3

4. Peel off the Masking Tape.

5. Absorb the solder left on the pattern using the Braided Shield Wire. **(Refer to Fig. 2-4.)**

   NOTE

   Do not move the Braided Shield Wire in the vertical direction towards the IC pattern.

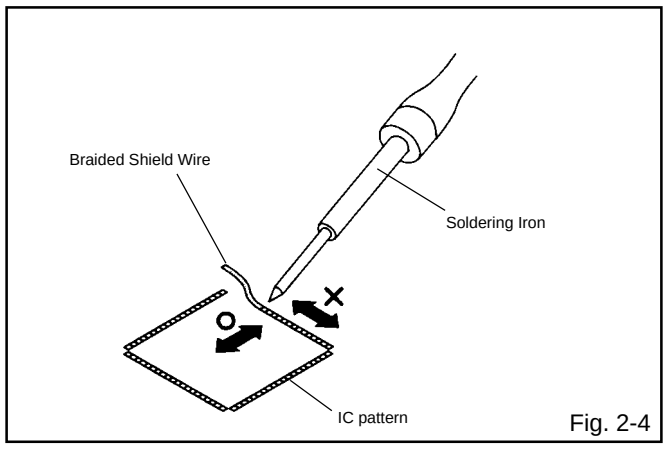


Fig. 2-4

DISASSEMBLY INSTRUCTIONS

INSTALLATION

1. Take care of the polarity of new IC and then install the new IC fitting on the printed circuit pattern. Then solder each lead on the diagonal positions of IC temporarily. **(Refer to Fig. 2-5.)**

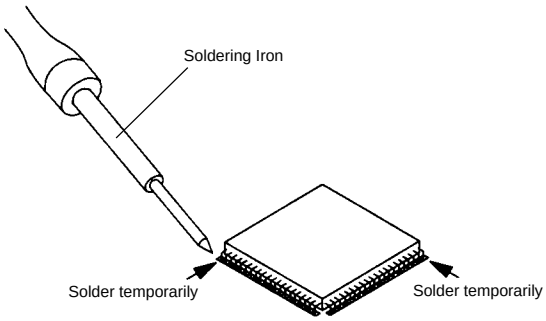


Fig. 2-5

2. Supply the solder from the upper position of IC leads sliding to the lower position of the IC leads. **(Refer to Fig. 2-6.)**

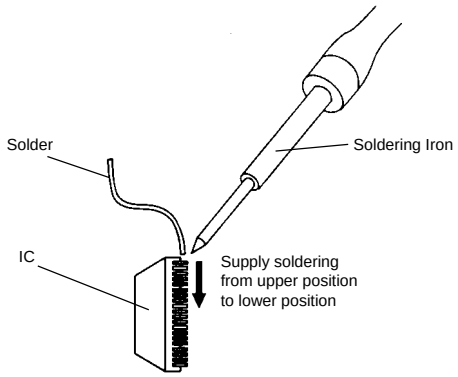


Fig. 2-6

3. Absorb the solder left on the lead using the Braided Shield Wire. **(Refer to Fig. 2-7.)**

   NOTE

   Do not absorb the solder to excess.

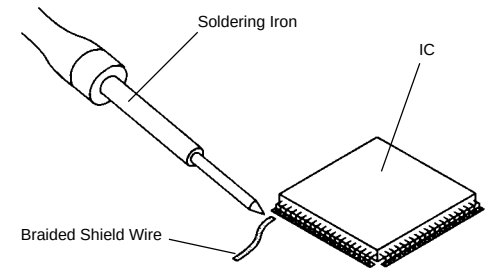


Fig. 2-7

4. When bridge-soldering between terminals and/or the soldering amount are not enough, resolder using a Thin-tip Soldering Iron. **(Refer to Fig. 2-8.)**

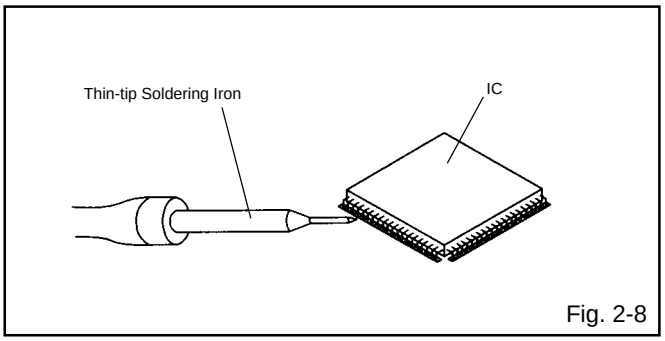


Fig. 2-8

5. Finally, confirm the soldering status on four sides of the IC using a magnifying glass.
   Confirm that no abnormality is found on the soldering position and installation position of the parts around the IC. If some abnormality is found, correct by resoldering.

   NOTE

   When the IC leads are bent during soldering and/or repairing, do not repair the bending of leads. If the bending of leads are repaired, the pattern may be damaged. So, always be sure to replace the IC in this case.

SERVICE MODE LIST

This unit is provided with the following SERVICE MODES so you can repair, examine and adjust easily.
To enter the Service Mode, press both set key and remote control key for more than 2 seconds.

Set Key	Remocon Key	Operations
VOL. (-) MIN	0	Releasing of V-CHIP PASSWORD.
VOL. (-) MIN	1	Initialization of factory data. NOTE: Do not use this for normal servicing. If you set factory initialization, the memories are reset such as the channel setting, and the POWER ON total hours.
VOL. (-) MIN	8	Check of the SUM DATA and MICON VERSION on the screen. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
VOL. (-) MIN	6	Check for the firmware version. Can be checked of the INITIAL DATA of MEMORY IC. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
VOL. (-) MIN	9	Display of the Adjustment MENU on the screen. Refer to the "ELECTRICAL ADJUSTMENT" (On-Screen Display Adjustment).

WHEN REPLACING EEPROM (MEMORY) IC

CONFIRMATION OF CHECK SUM, POWER ON TOTAL HOURS, MICON VERSION AND DIGITAL TV MICON FIRMWARE VERSION

Initial total of MEMORY IC, POWER ON total hours, MICON VERSION and Digital TV MICON Firmware VERSION can be checked on the screen. Total hours are displayed in 16 system of notation.

NOTE: If you set a factory initialization, the total hours is reset to "0".
Please refer to "CONFIRMATION OF INITIAL DATA" when SUM DATA is not corresponding.

1. Turn on the POWER, and set to the TV mode.
2. Set the VOLUME to minimum.
3. Press both VOL. DOWN button on the set and Channel button **(8)** on the remote control for more than 2 seconds.
4. After the confirmation of each check sum, power on total hours, micon version and Digital TV MICON Firmware version, turn off the power.

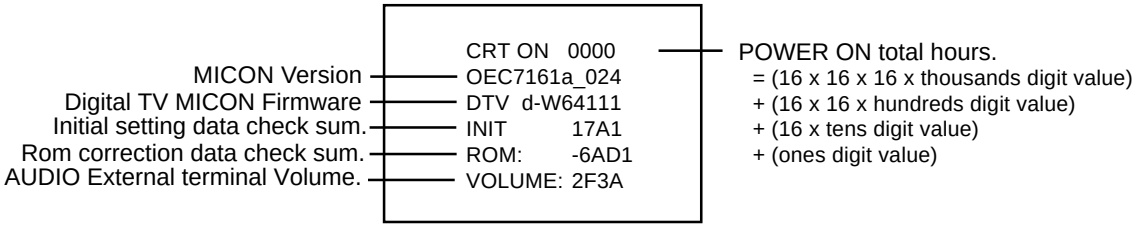

CRT ON 0000
POWER ON total hours.
= (16 x 16 x 16 x thousands digit value)
+ (16 x 16 x hundreds digit value)
+ (16 x tens digit value)
+ (ones digit value)
MICON Version
OEC7161a_024
Digital TV MICON Firmware
DTV d-W64111
Initial setting data check sum.
INIT 17A1
Rom correction data check sum.
ROM: -6AD1
AUDIO External terminal Volume.
VOLUME: 2F3A

FIG. 1

WHEN REPLACING EEPROM (MEMORY) IC

If a service repair is undertaken where it has been required to change the MEMORY IC, the following steps should be taken to ensure correct data settings while making reference to TABLE 1.

INI	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
00	C1	AE	0D	C5	36	08	02	0A	C0	80	07	00	28	36	03	00
10	68	10	11	11	88	88	16	00	00	00	00	00	00	05	AA	00
20	ED	00	00	F5	00	04	00	00	00	00	00	00	00	00	00	00
30	39	C0	07	22	03	03	00	00	00	01	D1	02	B1	13	7F	00
40	00	00	00	00	00	00	00	40	40	40	0F	40	20	00	C0	40
50	40	40	00	95	00	14	07	00	63	2F	01	01	00	00	00	00
60	21	AF	00	00	81	00	00	00	00	00	00	00	00	00	00	00
70	00	00	00	00	00	00	11	0A	00	00	00	00	00	00	00	00
80	6C	70	74	7C	80	84	88	8E	92	96	9A	9E	A2	A6	AA	AE
90	B2	B5	B8	BB	BD	BE	BF	C0	C0	C1	C1	C2	C3	C4	C5	C6
A0	C7	C8	C9	CA	CB	CB	CC	CC	CD	CE	CF	D0	D0	D1	D2	D3
B0	D4	D5	D6	D7	D8	D9	DA	DA	DB	DB	DB	DC	DC	DC	DD	DD
C0	00	00	00	00	00	00	00	00	00	00	00	00	29	05	00	00
D0	00	00	00	ED	ED	00	09	85	00	00	00	00	00	00	00	00
E0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
F0	00	00	00	00	00	00	AF	00	00	81	00	00	00	00	00	00
100	00	00	00	00	00	00	00	00	00	00	00	11	0A	04	00	00
110	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
120	00	29	05	00	00	00	00	00	ED	ED	00	09	85	00	00	00
130	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

Table 1

CONFIRMATION OF INITIAL DATA

1. Enter DATA SET mode by setting VOLUME to minimum.
2. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 2 seconds. ADDRESS and DATA should appear as FIG 1.
3. ADDRESS is now selected and should "blink". Using the UP/DOWN button on the remote, step through the ADDRESS until required ADDRESS to be changed is reached.
4. Press RIGHT/LEFT button to select DATA. When DATA is selected, it will "blink".
5. Again, step through the DATA using UP/DOWN button until required DATA value has been selected.
6. Pressing RIGHT/LEFT button will take you back to ADDRESS for further selection if necessary.
7. Repeat steps 3 to 6 until all data has been checked.
8. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input.

After the data input, set to the initializing of shipping.

9. Turn POWER on.
10. Press both VOL. DOWN button on the set and Channel button **(1)** on the remote control for more than 2 seconds.
11. After the finishing of the initializing of shipping, the unit will turn off automatically.

The unit will now have the correct DATA for the new MEMORY IC.

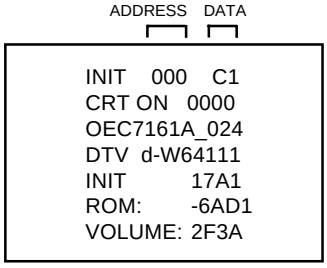
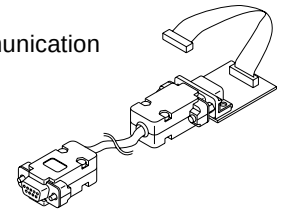
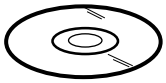
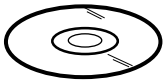


FIG. 1

RE-WRITE FOR DIGITAL SOFT FIRMWARE

JG198 Serial Communication Change JIG 	JG199 Flash UP-Date Soft Disc 	JG176 USA SD DTV ROM DISC 

Ref. No.	Part No.	Parts Name	Remarks
JG198	APJG198000	Serial Communication Change JIG	Connect the set to personal computer
JG199	APJG199000	Flash UP-Date Soft Disc	Up-Date of the Firmware
JG176	APJG176110	USA SD DTV ROM DISC	Up-Date of the Firmware

1. Confirm that the AC cord is plugged out.
2. Using the Serial Communication Change JIG **(JG198)**, connect the set to personal computer. **(Refer to Fig. 1)**

   NOTE: It is possible to write only with the personal computer of WINDOWS.

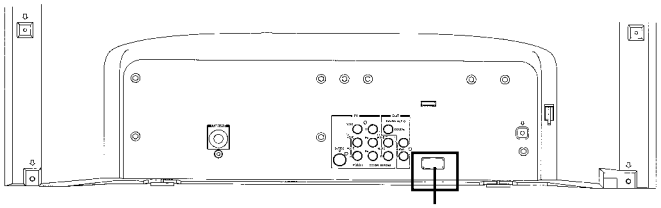


Fig. 1

3. Using the Flash UP-Date Soft Disc **(JG199)** and USA SD DTV ROM DISC **(JG176)**, please Re-write the DIGITAL SOFT FIRMWARE.
   The operating manual for Re-writing is included in Flash UP-Date Soft Disc **(JG199)**.

ELECTRICAL ADJUSTMENTS

1. ADJUSTMENT PROCEDURE

Read and perform these adjustments when repairing the circuits or replacing electrical parts or PCB assemblies.

CAUTION

- Use an isolation transformer when performing any service on this chassis.
- Before removing the anode cap, discharge electricity because it contains high voltage.
- When removing a PCB or related component, after unfastening or changing a wire, be sure to put the wire back in its original position.
- When you exchange IC and Transistor with a heat sink, apply silicon grease on the contact section of the heat sink. Before applying new silicon grease, remove all the old silicon grease. (Old grease may cause damages to the IC and Transistor.)

Prepare the following measurement tools for electrical adjustments.

1. Oscilloscope
2. Digital Voltmeter
3. Pattern Generator

On-Screen Display Adjustment

1. In the condition of NO indication on the screen. Press the VOL. DOWN button on the set and the Channel button **(9)** on the remote control for more than 2 seconds to appear the adjustment mode on the screen as shown in **Fig. 1-1**.

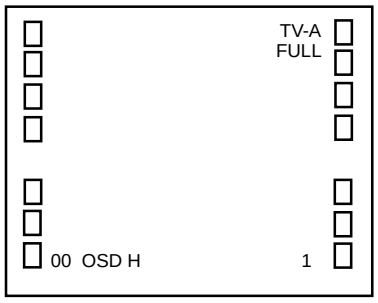


Fig. 1-1

2. Use the Channel UP/DOWN button or Channel button **(0-9)** on the remote control to select the options shown in **Fig. 1-2**.
3. Press the MENU button on the remote control to end the adjustments.
4. To display the adjustment screen for AV and YUV mode, press the TV/VIDEO button on the remote control to set to the AV and YUV mode.
5. To display the adjustment screen for DIGITAL mode, press the Channel button **(0-9)** on the remote control to select to the DIGITAL broadcasting.

NO.	FUNCTION	NO.	FUNCTION	NO.	FUNCTION
00	OSD H	20	COR BTM	40	COL.MIN
01	OSD C	21	S CORR	41	TINT CENT
02	CUT OFF	22	CORNER	42	SHARP.CENT
03	H.POSI	23	C PARA	43	SHARP.MAX
04	H BLK L	24	C SAW	44	SHARP.MIN
05	H BLK R	25	V SYMM	45	SUB BIAS
06	H.SIZE	26	R.BIAS	46	TILT CENTER
07	V. SIZE	27	G.BIAS	47	TEST STEREO
08	V. POSI	28	B.BIAS	48	TEST AUDIO
09	V. LIN	29	R.DRV	49	H FREQ
10	V CORR	30	G.DRV		
11	VS CORR	31	B.DRV		
12	V EHT	32	BRI.CENT		
13	H EHT	33	BRI.MAX		
14	V BLKP	34	BRI.MIN		
15	V BLKS	35	CONT.CENT		
16	V LIMIT	36	CONT.MAX		
17	EW PARA	37	CONT.MIN		
18	TRAPE	38	COL.CENT		
19	COR TOP	39	COL.MAX		

Fig. 1-2

2. BASIC ADJUSTMENTS

2-1: CONSTANT VOLTAGE

1. Place the set in AV MODE without signal.
2. Press the PIC SIZE button on the remote control to select the FULL screen mode.
3. Connect the digital voltmeter to the **TP401**.
4. Adjust the **VR501** until the digital voltmeter is 135 ± 0.5V.

2-2: CUT OFF

1. Press the PIC SIZE button on the remote control to select the FULL screen mode.
2. Adjust the unit to the following setting.
   R. BAIS=64, G. BIAS=64, B.BIAS=64,
   R DRIVE=64, G DRIVE=10, B DRIVE=64
3. Place the set in Aging Test for more than 15 minutes.
4. Place the set in AV MODE without signal.
5. Using the remote control, set the brightness and contrast to normal position.
6. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(02)** on the remote control to select “CUT OFF”.
7. Adjust the **Screen Volume** until a dim raster is obtained.

2-3: FOCUS

1. Press the PIC SIZE button on the remote control to select the FULL screen mode.
2. Receive the cross hatch signal from the Pattern Generator.
3. Turn the **F1 VR** and **F2 VR** fully clockwise once. **(Refer to Fig. 2-1)**
4. Adjust the **F1 VR** so that the screen becomes clearest. Then adjust the **F2 VR**.

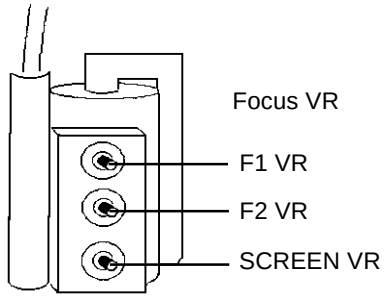


Fig. 2-1

ELECTRICAL ADJUSTMENTS

2-4: WHITE BALANCE

NOTE: Adjust after performing CUT OFF adjustment.

1. Place the set in Aging Test for more than 15 minutes.
2. Receive the white 100% signal from the Pattern Generator.
3. Press the PIC SIZE button on the remote control to select the FULL screen mode.
4. Using the adjustment control, set the brightness and contrast to normal position.
5. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(26)** on the remote control to select "R.BIAS".
6. Using the VOL. UP/DOWN button on the remote control, adjust the R.BIAS.
7. Press the CH. UP/DOWN button on the remote control to select the "G.BIAS", "B.BIAS", "R.DRIVE" or "B.DRIVE".
8. Using the VOL. UP/DOWN button on the remote control, adjust the G.BIAS, B.BIAS, R.DRIVE and B.DRIVE.
9. Perform the above adjustments 7 and 8 until the white color is achieved.

2-5: BRIGHT CENT

1. Receive the monoscope pattern. (RF Input)
2. Press the PIC SIZE button on the remote control to select the FULL screen mode.
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(32)** on the remote control to select "BRI. CENT".
5. Press the VOL. UP/DOWN button on the remote control until the white 5.4% is starting to be visible
6. Receive the monoscope pattern. (Audio Video Input)
7. Press the TV/VIDEO button on the remote control to set to the AV mode. Then perform the above adjustments 2~5.
8. Receive the monoscope pattern.
9. Press the TV/VIDEO button on the remote control to set to the YUV mode.Then perform the above adjustments 2~5.
10. Press the MENU button on the remote control to end the adjustments.
11. Receive the DIGITAL broadcasting.
12. Press the Channel button **(0-9)** on the remote control to select to the DIGITAL broadcasting.
13. Press the PIC SIZE button on the remote control to select the FULL screen mode.
14. Using the remote control, set the brightness, contrast, color and tint to normal position.
15. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(32)** on the remote control to select "BRI. CENT".
16. Press the VOL. UP/DOWN button on the remote control to increase the step numbers by 10 steps to the AV.

2-6: CONTRAST MAX

1. Receive an over 70dB color bar pattern. (RF Input)
2. Press the PIC SIZE button on the remote control to select the FULL screen mode.
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(36)** on the remote control to select "CONT.MAX".
5. Press the VOL. UP/DOWN button on the remote control until the contrast step No. becomes "110".
6. Receive a broadcast and check if the picture is normal.
7. Receive the color bar pattern. (Audio Video Input)
8. Press the TV/VIDEO button on the remote control to set to the AV mode. Then perform the above adjustments 2~6.
9. Receive the monoscope pattern.
10. Press the TV/VIDEO button on the remote control to set to the YUV mode.Then perform the above adjustments 2~6.
11. Press the MENU button on the remote control to end the adjustments.
12. Receive the DIGITAL broadcasting.
13. Press the Channel button **(0-9)** on the remote control to select to the DIGITAL broadcasting.
14. Press the PIC SIZE button on the remote control to select the FULL screen mode.
15. Using the remote control, set the brightness, contrast, color and tint to normal position.
16. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(36)** on the remote control to select "CONT.MAX".
17. Press the VOL. UP/DOWN button on the remote control to increase the step numbers by 5 steps to the AV.

ELECTRICAL ADJUSTMENTS

2-7: TINT

1. Receive the color bar pattern. (RF Input)
2. Press the PIC SIZE button on the remote control to select the FULL screen mode.
3. Using the remote control, set the brightness and contrast to normal position.
4. Connect the oscilloscope to **TP024**.
5. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(41)** on the remote control to select "TINT CENT".
6. Press the VOL. UP/DOWN button on the remote control until the section A becomes as straight line. **(Refer to Fig. 2-2)**
7. Receive the color bar pattern. (Audio Video Input)
8. Press the TV/VIDEO button on the remote control to set to the AV mode. Then perform the above adjustments 2~6. **(Refer to Fig. 2-2)**
9. Receive the color bar pattern.
10. Press the TV/VIDEO button on the remote control to set to the YUV mode.Then perform the above adjustments 2~6. **(Refer to Fig. 2-2)**
11. Press the MENU button on the remote control to end the adjustments.
12. Receive the DIGITAL broadcasting.
13. Press the Channel button **(0-9)** on the remote control to select to the DIGITAL broadcasting.
14. Press the PIC SIZE button on the remote control to select the FULL screen mode.
15. Using the remote control, set the brightness, contrast, color and tint to normal position.
16. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(41)** on the remote control to select "TINT CENT".
17. Press the VOL. UP/DOWN button on the remote control until the contrast step No. becomes "63".

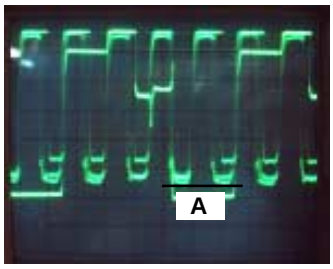


Fig. 2-2

2-8: COLOR CENT

1. Receive the color bar pattern. (RF Input)
2. Press the PIC SIZE button on the remote control to select the FULL screen mode.
3. Using the remote control, set the brightness, contrast, color and tint to normal position.
4. Connect the oscilloscope to **TP022**.
5. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(38)** on the remote control to select "COL.CENT".
6. Adjust the VOLTS RANGE VARIABLE knob of the oscilloscope until the range between white 100% and 0% is set to 4 scales on the screen of the oscilloscope.
7. Press the VOL. UP/DOWN button on the remote control until the red color level is adjusted to 105 ± 10% of the white level. **(Refer to Fig. 2-3)**
8. Receive the color bar pattern. (Audio Video Input)
9. Press the AV mode. Then perform the above adjustments 2~6.**(Refer to Fig. 2-3)**
10. Receive the color bar pattern.
11. Press the TV/VIDEO button on the remote control to set to the YUV mode.Then perform the above adjustments 2~6. **(Refer to Fig. 2-3)**
12. Press the MENU button on the remote control to end the adjustments.
13. Receive the DIGITAL broadcasting.
14. Press the Channel button **(0-9)** on the remote control to select to the DIGITAL broadcasting.
15. Press the PIC SIZE button on the remote control to select the FULL screen mode.
16. Using the remote control, set the brightness, contrast, color and tint to normal position.
17. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(38)** on the remote control to select "COL.CENT".
18. Press the VOL. UP/DOWN button on the remote control until the contrast step No. becomes "79".

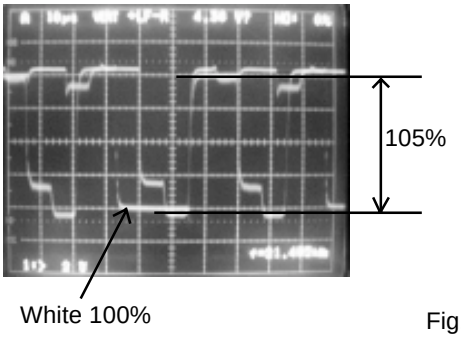


Fig. 2-3

ELECTRICAL ADJUSTMENTS

2-9: HORIZONTAL POSITION

1. Receive the monoscope pattern.
2. Press the PIC SIZE button on the remote control to select the FULL screen mode.
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(03)** on the remote control to select “H.POSI”.
5. Press the VOL. UP/DOWN button on the remote control until the SHIFT quantity of the OVER SCAN on right and left becomes minimum.

2-10: HORIZONTAL SIZE

1. Receive the monoscope pattern.
2. Press the PIC SIZE button on the remote control to select the FULL screen mode.
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(06)** on the remote control to select "H.SIZE".
5. Press the VOL. UP/DOWN button on the remote control until the SHIFT quantity of the OVER SCAN on the right and left becomes 10± 2%.

2-11: VERTICAL LINEARITY

1. Receive the monoscope pattern.
2. Press the PIC SIZE button on the remote control to select the FULL screen mode.
3. Using the remote control, set the brightness, contrast, to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(09)** on the remote control to select "V.LIN".
5. Press the VOL. UP/DOWN button on the remote control until the SHIFT quantity of the OVER SCAN on upside and downside becomes minimum.

2-12: VERTICAL POSITION

1. Receive the monoscope pattern.
2. Press the PIC SIZE button on the remote control to select the FULL screen mode.
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(08)** on the remote control to select "V.POSI".
5. Press the VOL. UP/DOWN button on the remote control until the horizontal line becomes fit to the notch of the shadow mask. **(Refer to Fig. 2-4)**

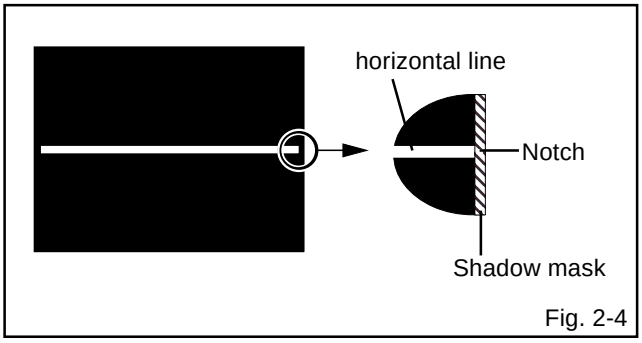


Fig. 2-4

2-13: VERTICAL SIZE

1. Receive the monoscope pattern.
2. Press the PIC SIZE button on the remote control to select the FULL screen mode.
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(07)** on the remote control to select “V. SIZE”.
5. Press the VOL. UP/DOWN button on the remote control until the SHIFT quantity of the OVER SCAN on upside and downside becomes 10 ± 2%.

2-14: TRAPEZIUM

1. Receive the crosshatch signal from the Pattern Generator.
2. Press the PIC SIZE button on the remote control to select the FULL screen mode.
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(18)** on the remote control to select “TRAPE”.
5. Press the VOL. UP/DOWN button on the remote control until the both ends right and left vertical lines of the 1th length lines screen become parallel.

2-15: PARABOLA CORR

1. Receive the chosshatch pattern.
2. Press the PIC SIZE button on the remote control to select the FULL screen mode.
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(17)** on the remote control to select “EW PARA”.
5. Press the VOL. UP/DOWN button on the remote control, so that the line becomes straight from the outside of the right and left.

ELECTRICAL ADJUSTMENTS

2-16: COR TOP/BTM

1. Receive the crosshatch signal from the Pattern Generator.
2. Press the PIC SIZE button on the remote control to select the FULL screen mode.
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(19)** on the remote control to select “COR. TOP”.
5. Press the VOL. UP/DOWN button on the remote control until the both ends vertical lines become straight.
6. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(20)** on the remote control to select “COR. BTM”.
7. Press the VOL. UP/DOWN button on the remote control until the both ends vertical lines of the screen become parallel.

2-17: OSD H POSITION

1. Receive the monoscope pattern from the Pattern Generator.
2. Press the PIC SIZE button on the remote control to select the FULL screen mode.
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(00)** on the remote control to select "OSD H".
5. Press the VOL. UP/DOWN button on the remote control until the difference of A and B becomes minimum. **(Refer to Fig. 2-5)**

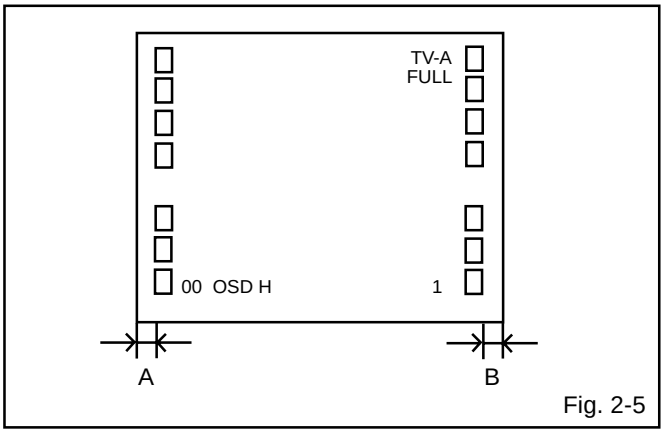


Fig. 2-5

2-18: TILT CENT

1. Connect the digital voltmeter between **CP403**.
2. Receive the crosshatch signal from the Pattern Generator.
3. Press the PIC SIZE button on the remote control to select the FULL screen mode.
4. Using the remote control, set the brightness and contrast to normal position.
5. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(46)** on the remote control to select "TILT CENT".
6. Press the VOL. UP/DOWN button on the remote control until the voltage become minimum(0V).

ELECTRICAL ADJUSTMENTS

2-19: Confirmation of Fixed Value (Step No.)

Please check if the fixed values of each of the adjustment items are set correctly referring below.
(TV/AV/YUV/DIGITAL)

NO.	FUNCTION	FULL				NATURAL			
		TV	AV	YUV	DIGITAL	TV	AV	YUV	DIGITAL
		Step No.	Step No.	Step No.	Step No.	Step No.	Step No.	Step No.	Step No.
1	OSD C	07	07	07	07	07	07	07	07
4	K BLK L	07	07	07	07	07	07	07	07
5	K BLK R	03	03	03	03	00	00	00	00
10	V CORR	15	15	15	15	15	15	15	15
11	VS CORR	45	45	45	45	45	45	45	45
12	V EHT	03	03	03	03	03	03	03	03
13	H EHT	01	01	01	01	01	01	01	01
14	V BLK P	31	31	31	31	31	31	31	31
15	V BLK S	31	31	31	31	31	31	31	31
16	V LIMIT	00	00	00	00	00	00	00	00
21	S CORR	12	12	12	12	12	12	12	12
22	CORNER	20	20	20	20	20	20	20	20
25	V SYMM	128	128	128	128	128	128	128	128
33	BRI.MAX	100	100	100	110	100	100	100	110
34	BRI.MIN	40	40	40	50	40	40	40	50
35	CONT.CENT	60	60	60	60	60	60	60	60
37	CONT.MIN	10	10	10	10	10	10	10	10
39	COL.MAX	127	127	127	127	127	127	127	127
40	COL.MIN	00	00	00	00	00	00	00	00
42	SHARP.CENT	25	25	25	25	25	25	25	25
43	SHARP.MAX	63	63	63	63	63	63	63	63
44	SHARP.MIN	00	00	00	00	00	00	00	00
45	SUB BIAS	127	127	127	127	127	127	127	127
47	TEST STEREO	00	00	00	00	00	00	00	00
48	TEST AUDIO	00	00	00	00	00	00	00	00
49	H FREQ	63	63	63	63	63	63	63	63

ELECTRICAL ADJUSTMENTS

3. PURITY AND CONVERGENCE ADJUSTMENTS

NOTE

1. Turn the unit on and let it warm up for at least 30 minutes before performing the following adjustments.
2. Place the CRT surface facing east or west to reduce the terrestrial magnetism.
3. Turn ON the unit and demagnetize with a Degauss Coil.

3-1: STATIC CONVERGENCE (ROUGH ADJUSTMENT)

1. Tighten the screw for the magnet. Refer to the adjusted CRT for the position. **(Refer to Fig. 3-1)**
   If the deflection yoke and magnet are in one body, untighten the screw for the body.
2. Receive the green raster pattern from the color bar generator.
3. Slide the deflection yoke until it touches the funnel side of the CRT.
4. Adjust center of screen to green, with red and blue on the sides, using the pair of purity magnets.
5. Switch the color bar generator from the green raster pattern to the crosshatch pattern.
6. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
7. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.
8. Adjust the crosshatch pattern to change to white by repeating steps 6 and 7.

3-2: PURITY

NOTE

Adjust after performing adjustments in section 3-1.

1. Receive the green raster pattern from color bar generator.
2. Adjust the pair of purity magnets to center the color on the screen.
   Adjust the pair of purity magnets so the color at the ends are equally wide.
3. Move the deflection yoke backward (to neck side) slowly, and stop it at the position when the whole screen is green.
4. Confirm red and blue color.
5. Adjust the slant of the deflection yoke while watching the screen, then tighten the fixing screw.

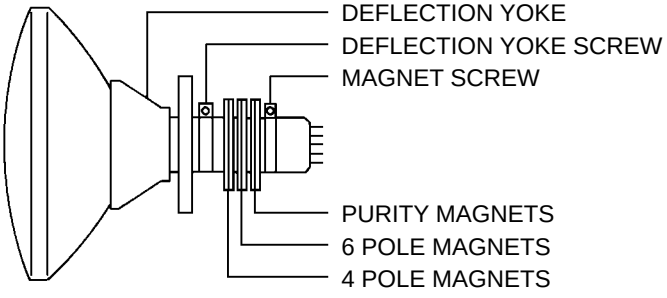


Fig. 3-1

3-3: STATIC CONVERGENCE

NOTE

Adjust after performing adjustments in section 3-2.

1. Receive the crosshatch pattern from the color bar generator.
2. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
3. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.

3-4: DYNAMIC CONVERGENCE

NOTE

Adjust after performing adjustments in section 3-3.

1. Adjust the differences around the screen by moving the deflection yoke upward/downward and right/left. **(Refer to Fig. 3-2-a)**
2. Insert three wedges between the deflection yoke and CRT funnel to fix the deflection yoke. **(Refer to Fig. 3-2-b)**

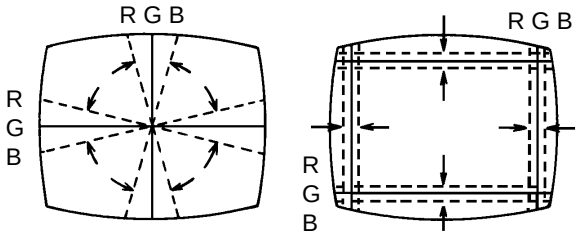
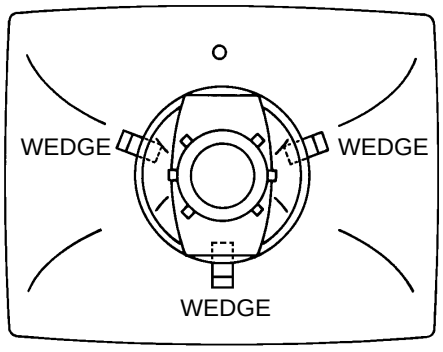


Fig. 3-2-a

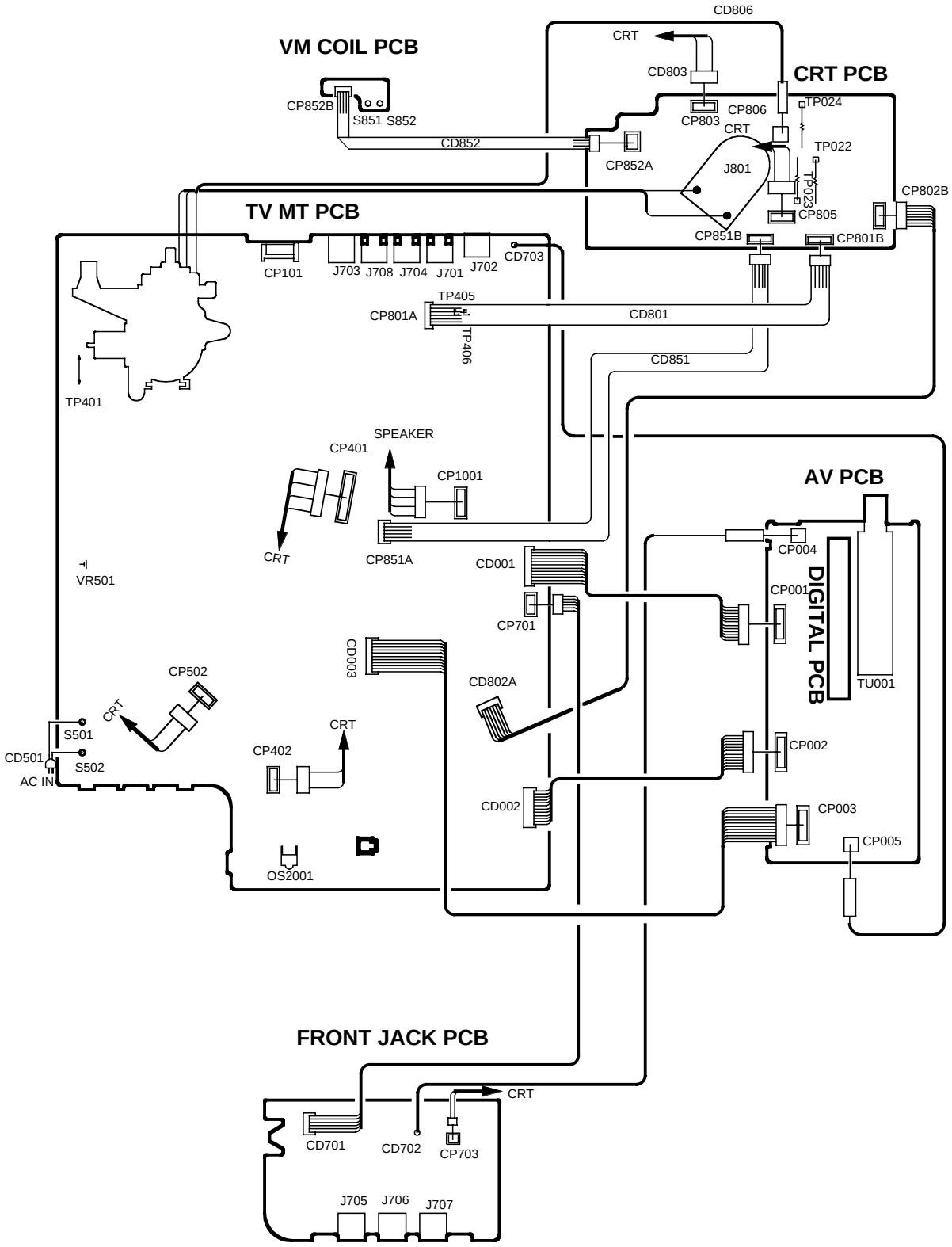


WEDGE POSITION

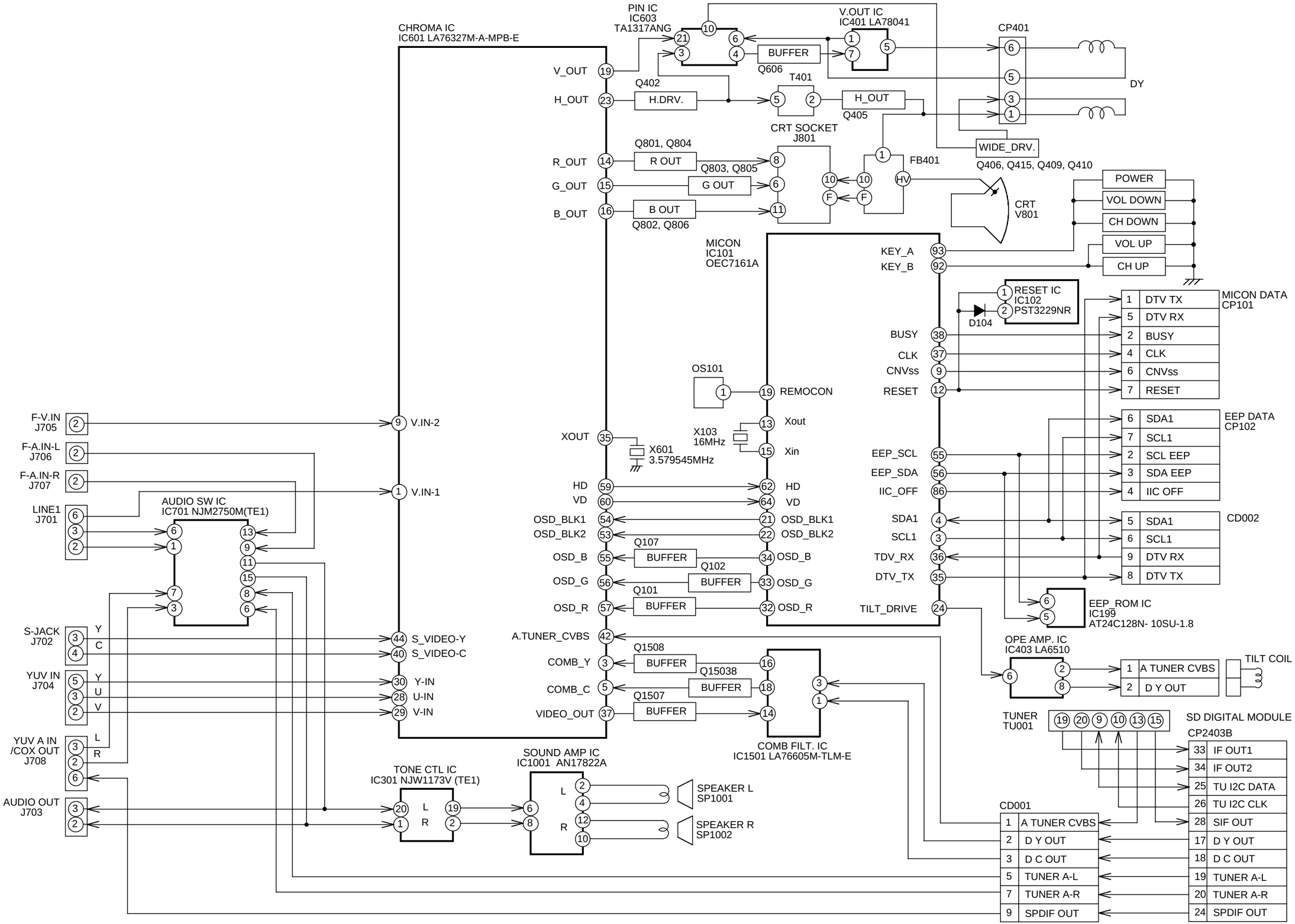
Fig. 3-2-b

ELECTRICAL ADJUSTMENTS

4. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)



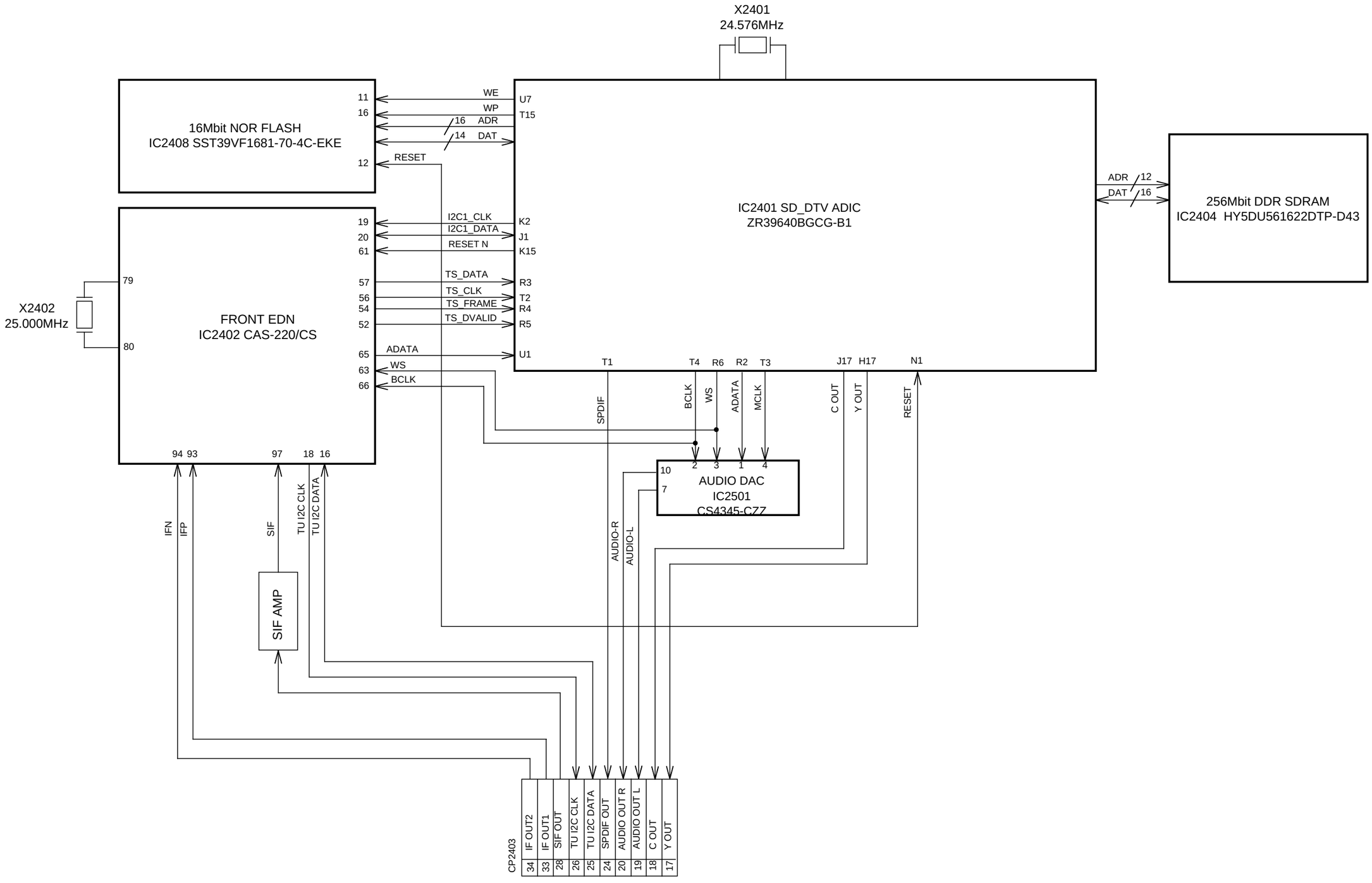
MICON/CHROMA BLOCK DIAGRAM



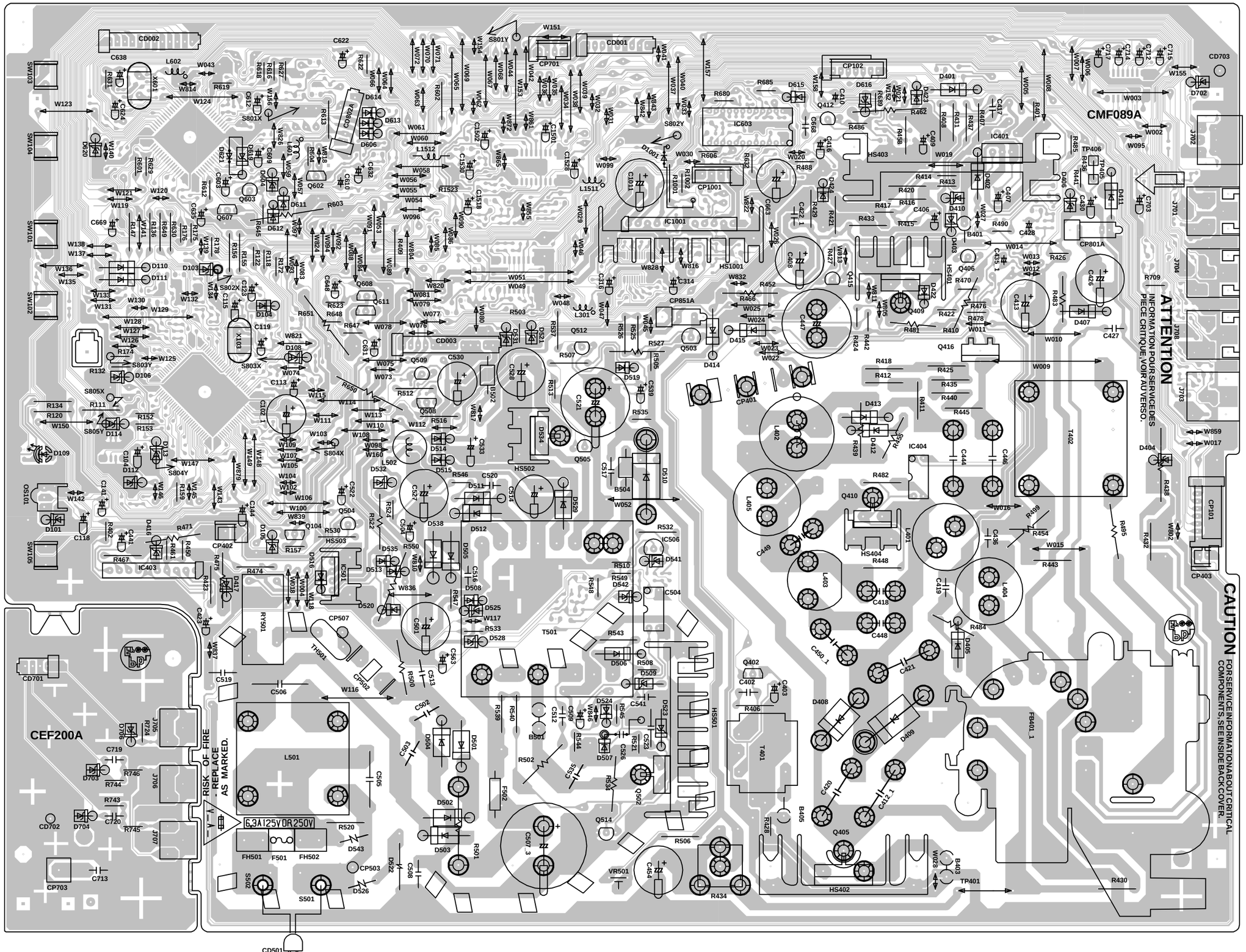
E-1

E-2

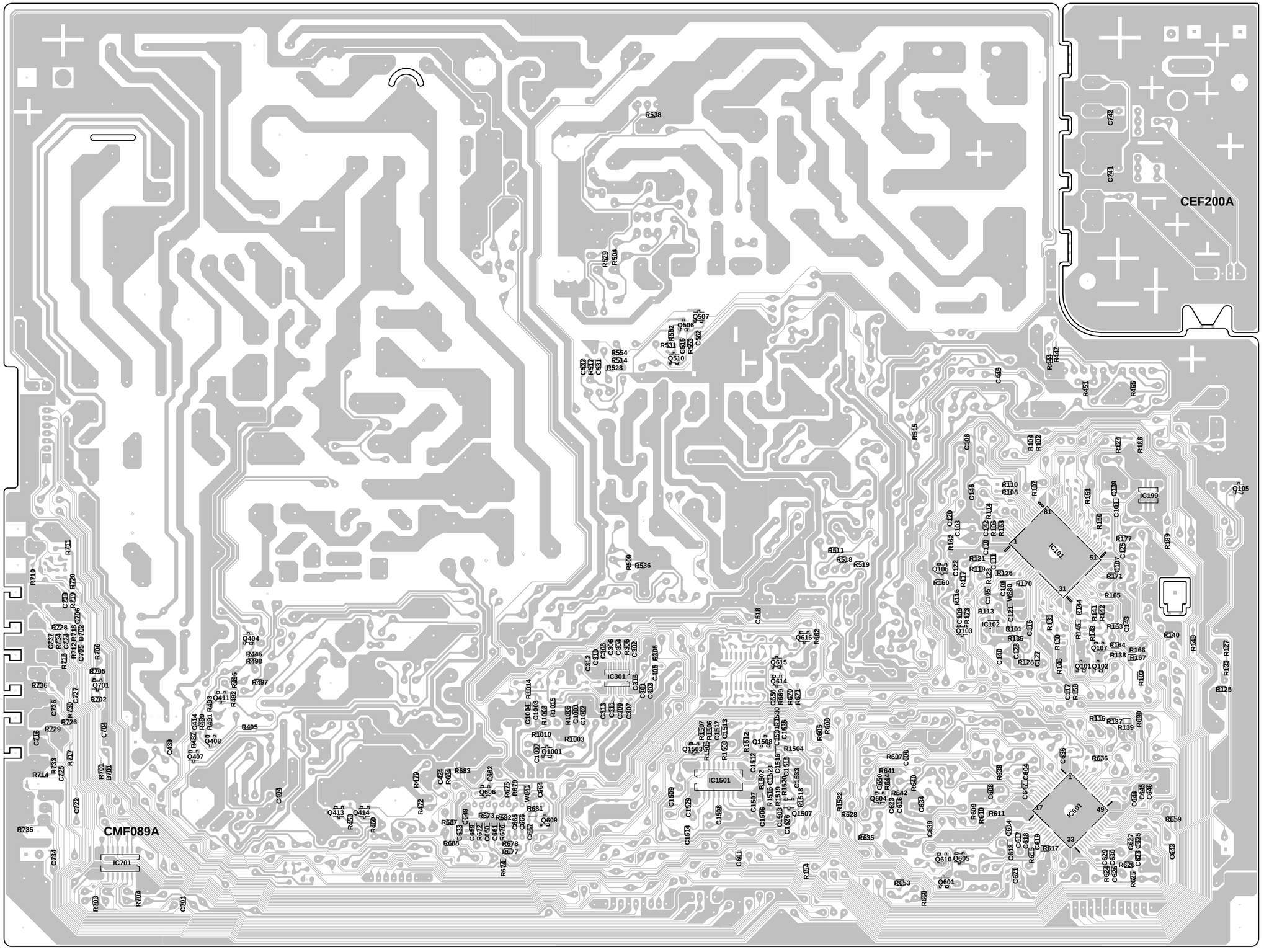
SD DIGITAL MODULE BLOCK DIAGRAM



PRINTED CIRCUIT BOARDS
TV MT/FRONT JACK (INSERTED PARTS)
SOLDER SIDE

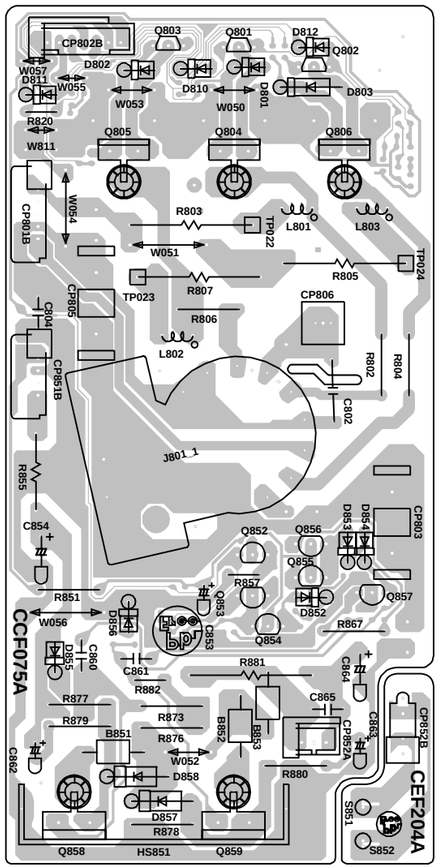


PRINTED CIRCUIT BOARDS
TV MT/FRONT JACK (CHIP MOUNTED PARTS)
SOLDER SIDE

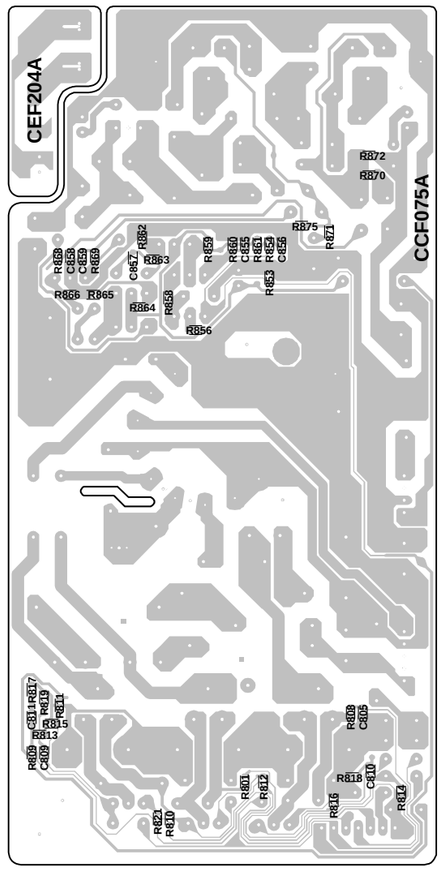


PRINTED CIRCUIT BOARDS

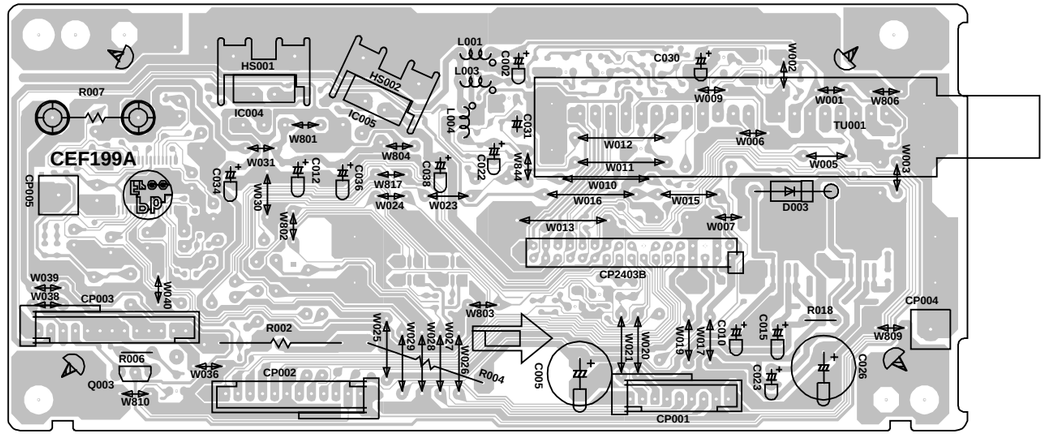
CRT/VM COIL (INSERTED PARTS)
SOLDER SIDE



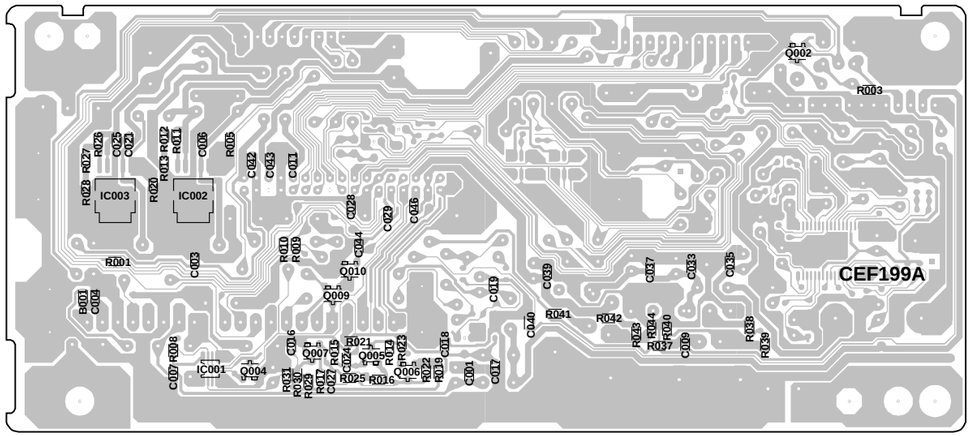
CRT (CHIP MOUNTED PARTS)
SOLDER SIDE



AV (INSERTED PARTS)
SOLDER SIDE

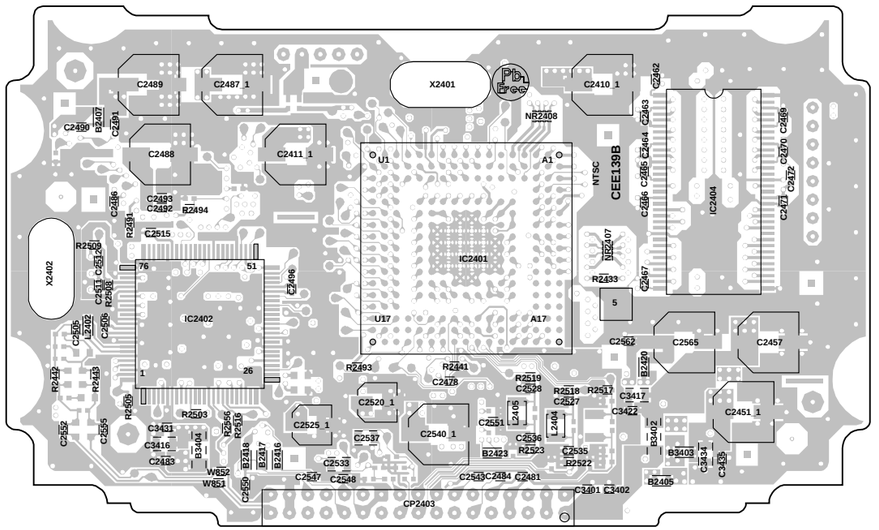


AV (CHIP MOUNTED PARTS)
SOLDER SIDE

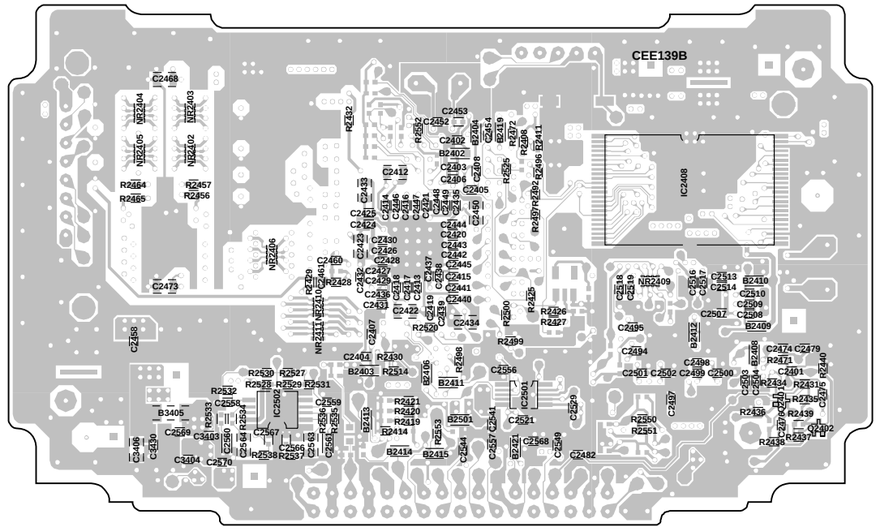


PRINTED CIRCUIT BOARDS

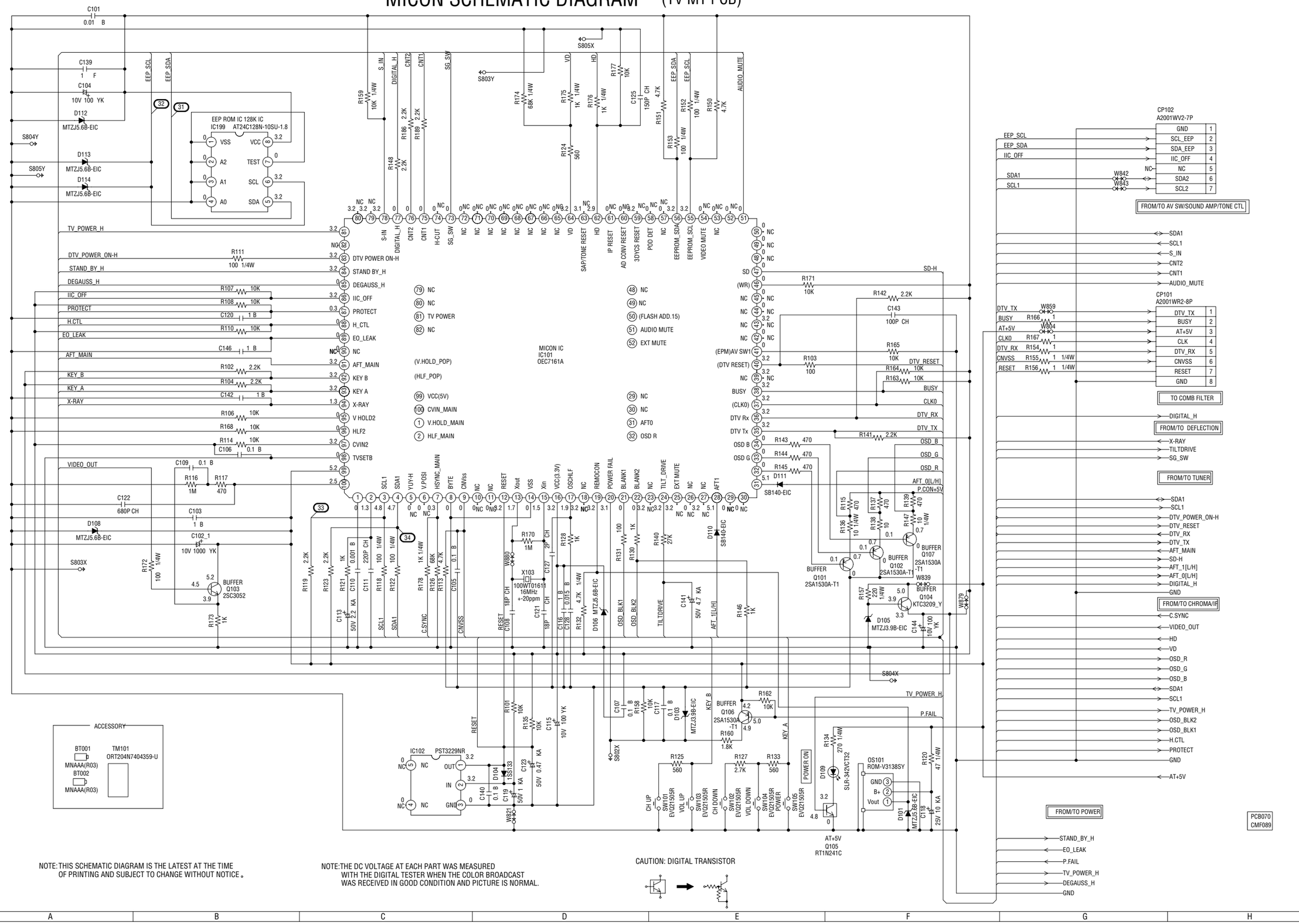
DIGITAL (TOP SIDE)



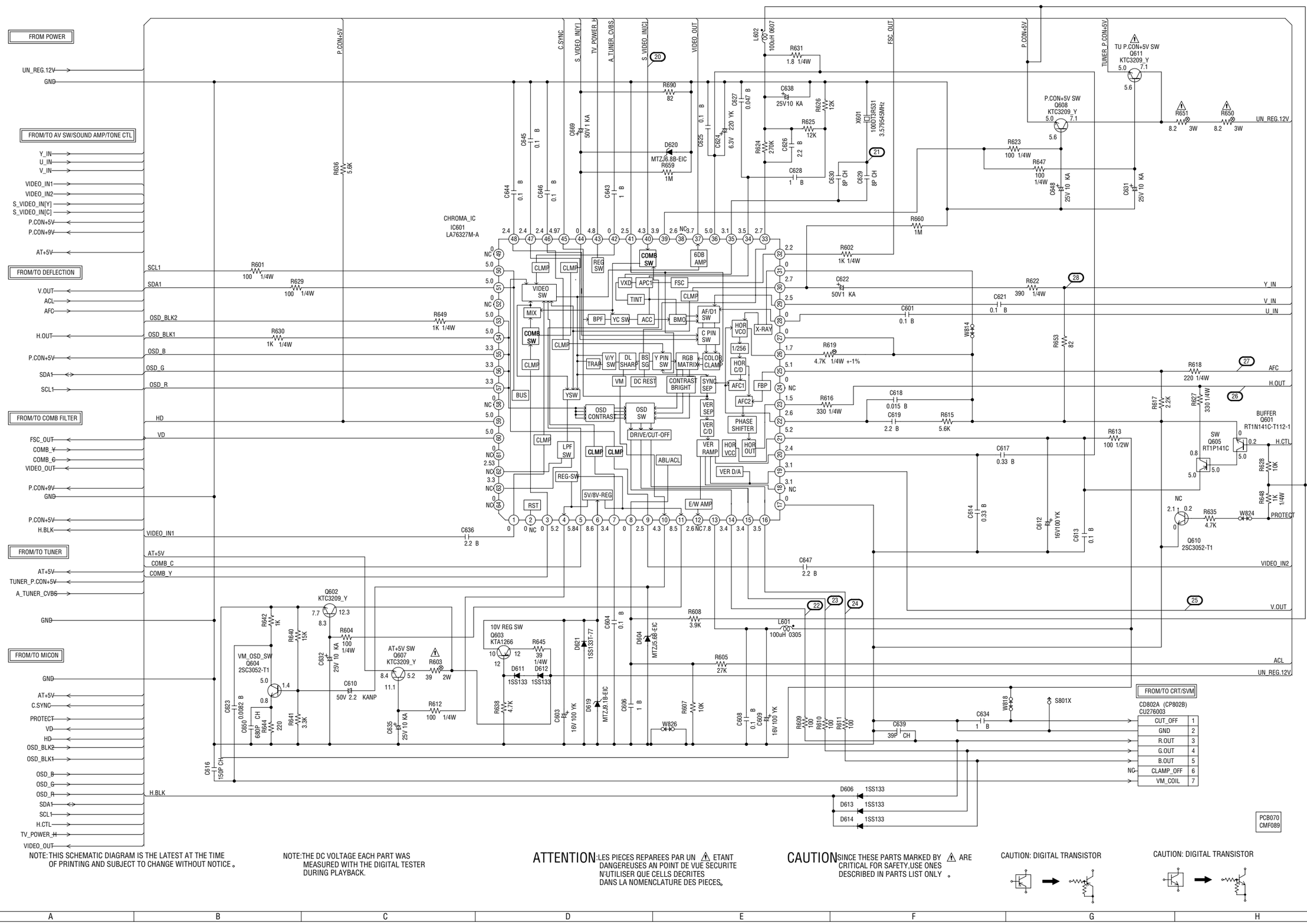
DIGITAL (BOTTOM SIDE)



MICON SCHEMATIC DIAGRAM (TV MT PCB)



CHROMA/IF SCHEMATIC DIAGRAM (TV MT PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

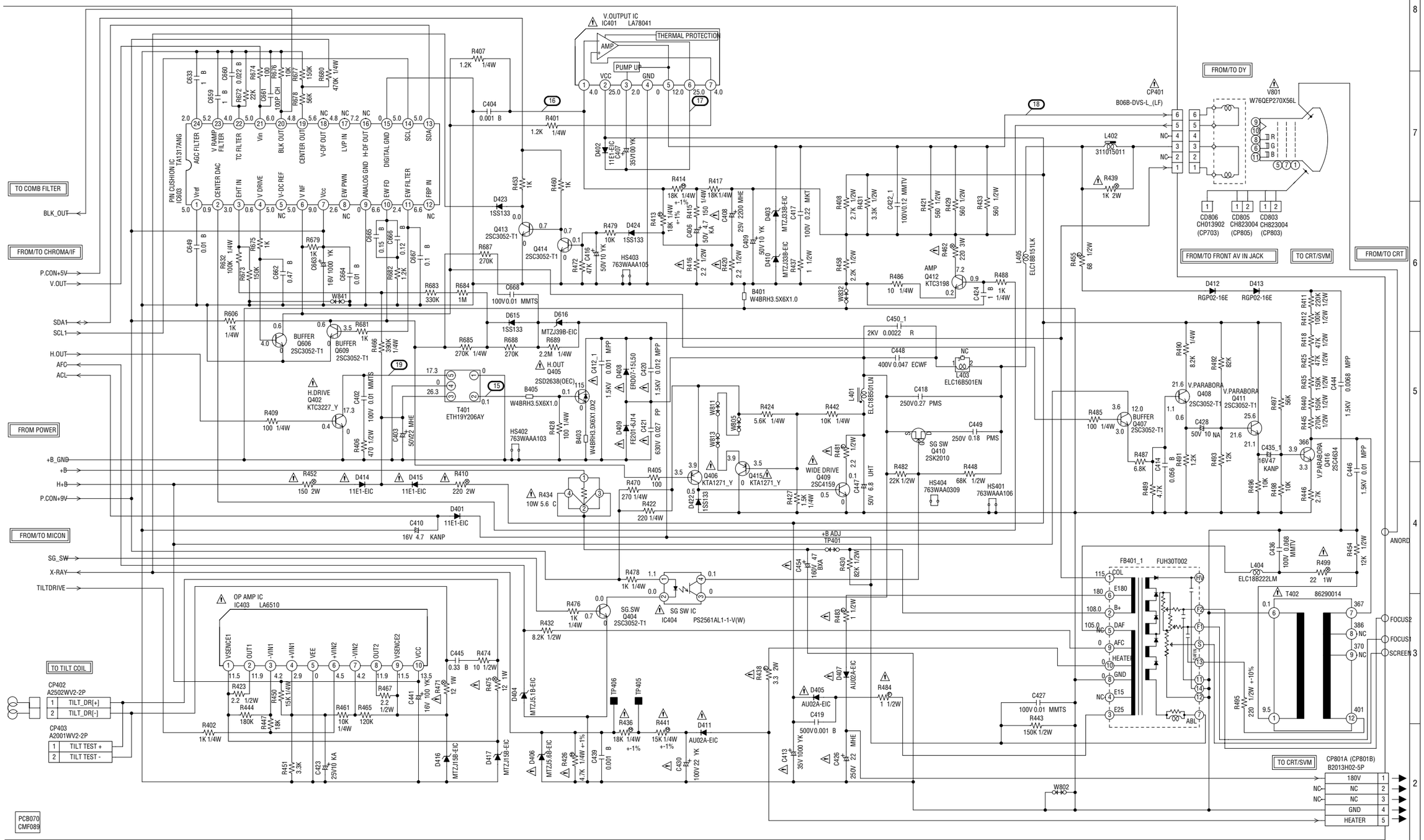
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY 。

CAUTION: DIGITAL TRANSISTOR

CAUTION: DIGITAL TRANSISTOR

DEFLECTION SCHEMATIC DIAGRAM (TV MT PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

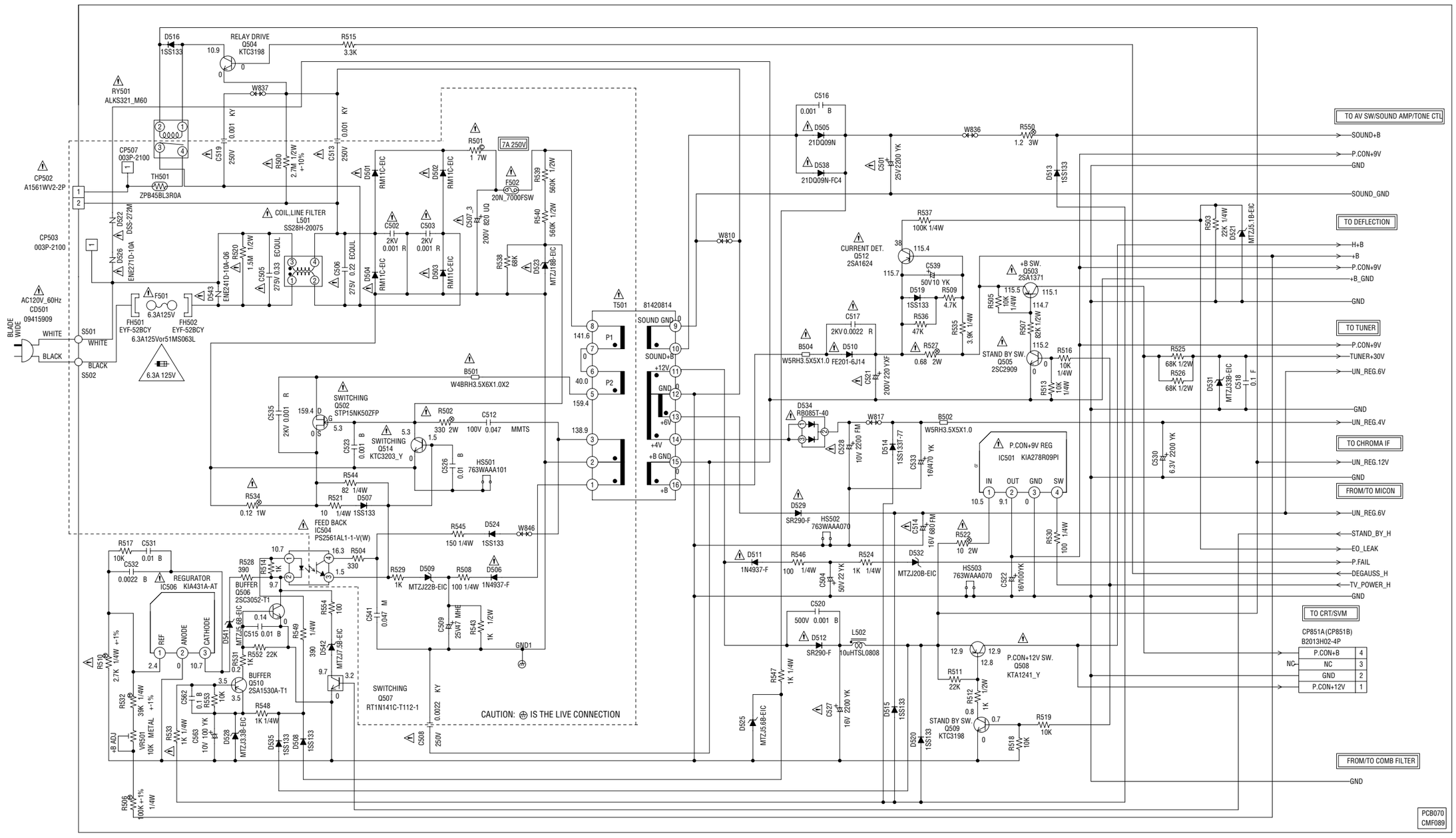
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR. THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY.USE ONES DESCRIBED IN PARTS LIST ONLY 。

POWER SCHEMATIC DIAGRAM (TV MT PCB)



6.3A 125V

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE 6.3A 125V(F501) , 7A 250V(F502) AND 5A 125V (F503)

ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES D'INCEIE N'UTILISER QUE DES FUSIBLE DE MEME TYPE 6.3A 125V(F501) 7A 250V(F502) ET 5A 125V (F503)

CAUTION: F502 AND F503 ARE MANUFACTURED BY SKYGETE CO.,LTD TYPE 20N

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

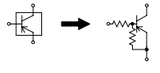
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR. THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.

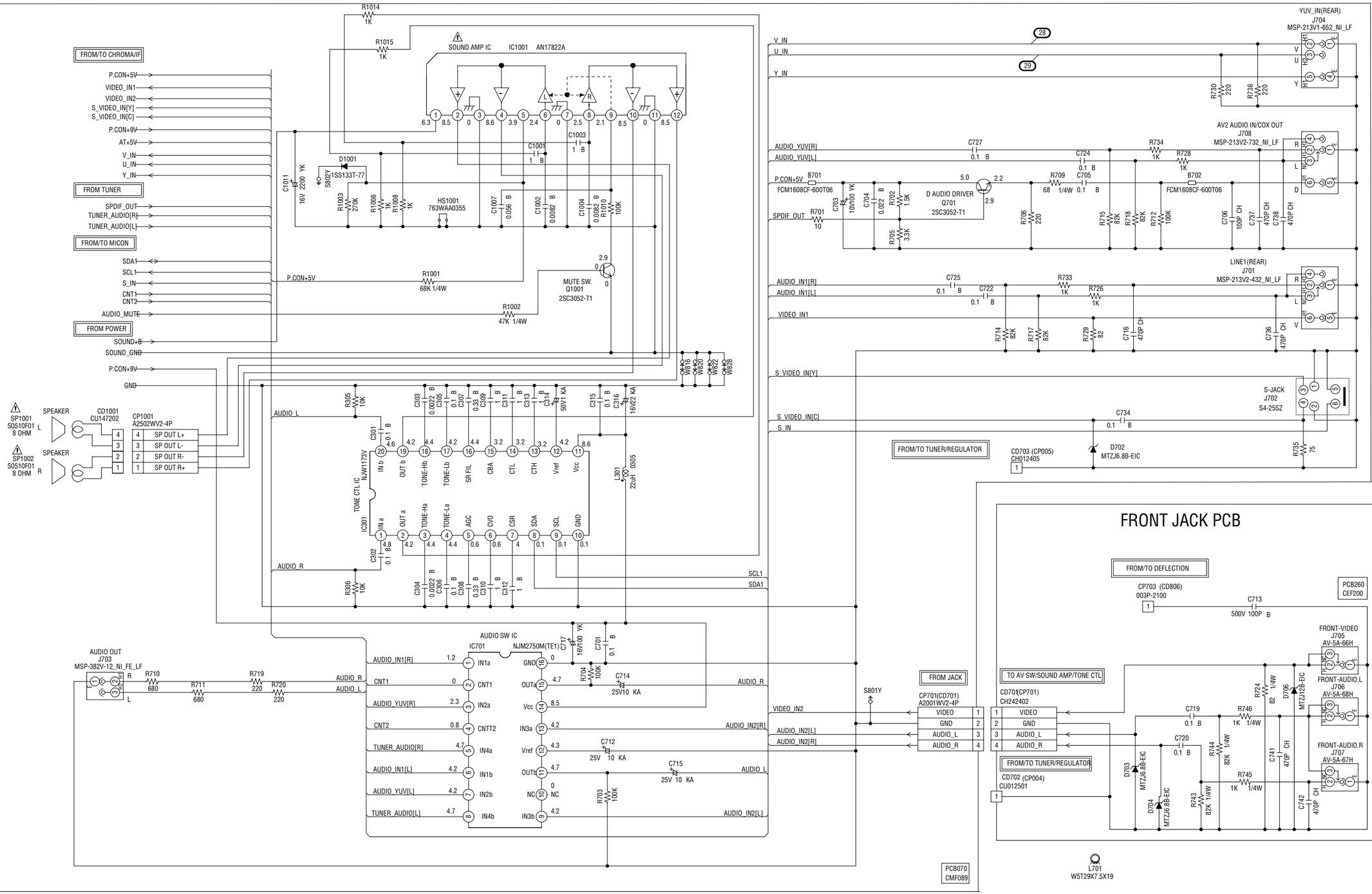
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

CAUTION: DIGITAL TRANSISTOR



AV SW/SOUND AMP/TONE CTL SCHEMATIC DIAGRAM (TV MT PCB)



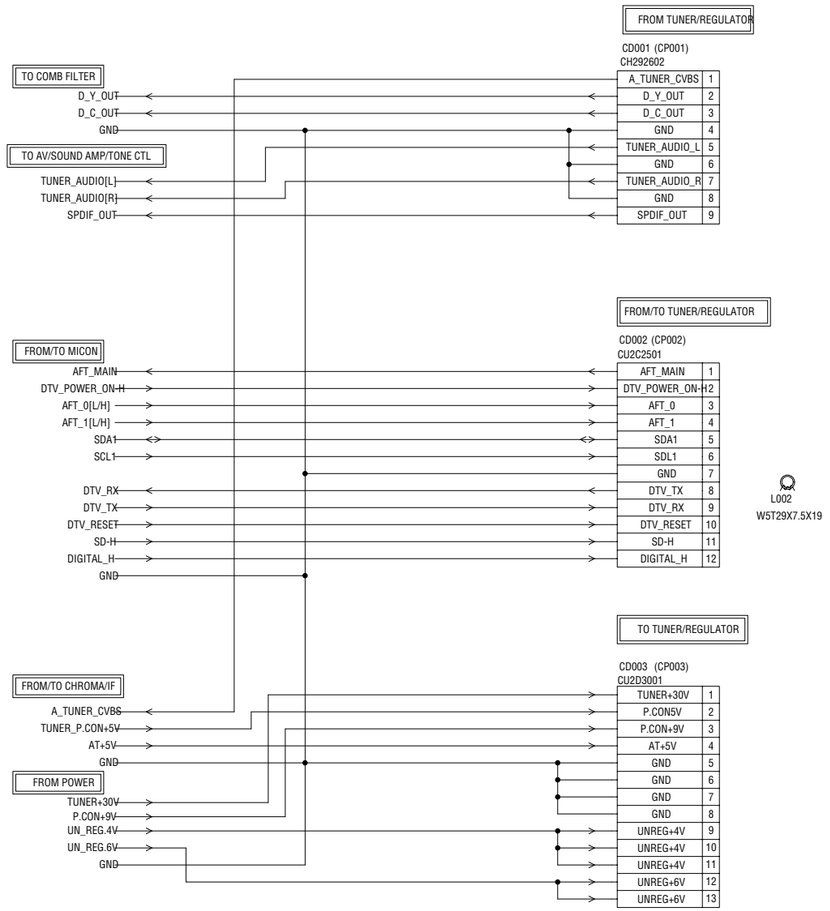
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY 。

TUNER SCHEMATIC DIAGRAM (TV MT PCB)

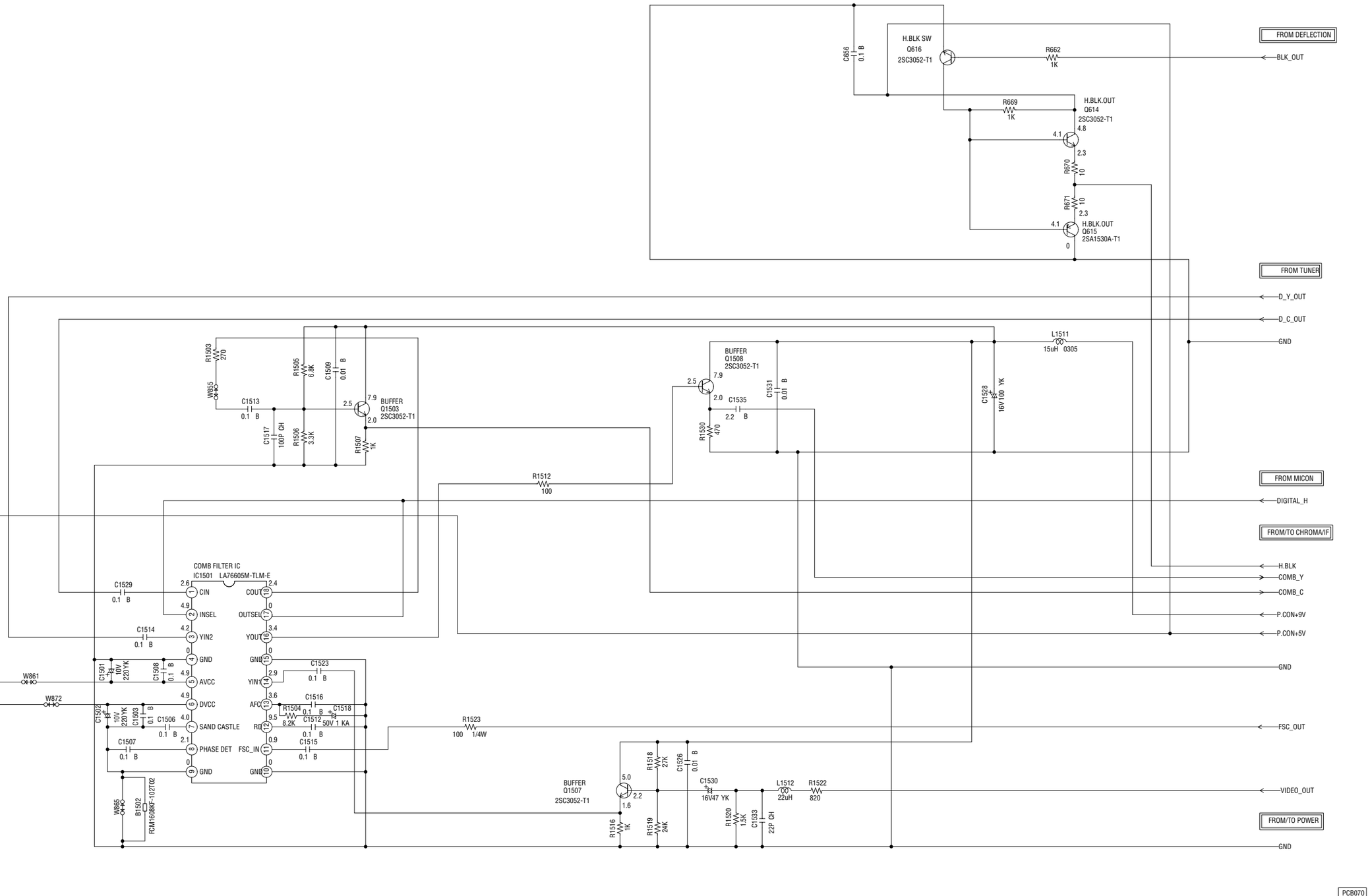


PCB070
CMF089

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

COMB FILTER SCHEMATIC DIAGRAM (TV MT PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

TUNER / REGULATOR SCHEMATIC DIAGRAM (AV PCB)

DIGITAL/ANALOG TUNER W/NTSC_MPX
TU001 ENG36A49KF

FROM/TO TUNER

CP001 (CD001) A2001WV2-9P
1 A_TUNER_CVBS
2 D_Y_OUT
3 D_C_OUT
4 GND
5 TUNER_AUDIO_L
6 GND
7 TUNER_AUDIO_R
8 GND
9 SPDIF_OUT

CP002 (CD002) A2001WV2-12P
1 AFT_MAIN
2 DTV_POWER_ON-H
3 AFT_0
4 AFT_1
5 SDA1 → NC
6 SDL1 → NC
7 GND
8 DTV_RX
9 DTV_TX
10 DTV_RESET
11 SD-H
12 DIGITAL_H → NC

CP003 (CD003) A2001WV2-13P
1 TUNER+30V
2 TU P.CON5V
3 P.CON+9V
4 AT+5V
5 GND
6 GND
7 GND
8 GND
9 UNREG4V
10 UNREG4V
11 UNREG4V
12 UNREG6V
13 UNREG6V

TU001 pins: 1 OOB, 2 +5V, 3 GND, 4 +30V, 5 TU, 6 GND, 7 +5V, 8 AGC, 9 SDA, 10 SCL, 11 AFT, 12 AGC_OUT, 13 V_OUT, 14 +5V, 15 SIF, 16 IF SW, 17 IF OUT, 18 IF AGC, 19 IF_OUT 1, 20 IF_OUT 2; 1 NC, 5 NC, 24, 23, 22

C004 0.1 B
B001 FCM1608KF-102T02
C001 0.1 B
C002 6.3V 220 YK
L001 22uH 0305
C019 0.1 B
C022 6.3V 220 YK
R021 3.3K
C031 10V 10 KANP
W844
55
L003 100uH 0305
L004 22uH 0305
C040 0.1 B
C007 0.1 B
SW IC001 TC7W66FU
C024 0.01 B
C018 0.01 B
C017 0.1 B
R014 12K
R019 390K
R022 4.7K
R030 8.2K
R029 15K
R031 82K
R025 4.7K
R016 75
R023 1K
R015 12K
R017 2.2K
C027 0.0022 B
C030 25V10 KA
IF AMP Q005 2SC3841-T1B_T63
IF AMP Q006 2SC3841-T1B_T63
IF AMP Q007 2SC3841-T1B_T63
R008 2.2K
SW Q004 KRC103SRTK
C016 0.47 B
SW Q009 KRA102SRTK
SW Q010 KRC103SRTK
FROM/TO AV SW/SOND AMP/TONE CTL
CP005 (CD703) 003P-2100

TU_I2C_DATA
TU_I2C_CLK
IF_AGC
IF_OUT_1
IF_OUT_2
SIF_OUT
RF_SW
A_TUNER_CVBS

AT+5V Q003 KTA1273_Y
R003 22K
R006 180 1/4W
AT+5V Q002 KRC102SRTK
R005 1K
R002 3.9 3W
R004 1 3W
C005 10V 2200 YK
R007 0.47 5W
R018 1K 1/4W
R020 12K
D003 1N4005-EIC
W817
C010 10V100 YK
C006 0.33 B
C011 0.1 B
C015 10V470 YK
R011 3.9K +-1%
R012 2.2K +-1%
R013 68

REG. +3.3V IC002 BA00BC0WFP 02
REG. +2.6V IC003 BA00BC0WFP 02
ACIC. 1.8V IC004 PQ070VK02FZH 02
F/E 1.8V IC005 PQ070VK02FZH 02
V_C V_IN GND V_OUT V_ADJ
V_IN CTL V_OUT ADJ GND

C023 10V100 YK
C021 0.33 B
C025 0.1 B
C026 10V 2200 YK
R026 1K +-1%
R027 820 +-1%
R028 100
W801 NC
C012 10V 470 YK
C033 0.33 B
C034 10V470 YK
C035 0.1 B
R037 1K
R038 82
R039 470
R040 1K
C009 1 B
HS001 763WAA0309
C036 10V470 YK
C037 0.33 B
C038 10V 470 YK
C039 0.1 B
W804 NC
R041 1K
R042 68
R043 470
R044 1K
HS002 763WAA0309

W802
W803
TUNER_AUDIO[L]
TUNER_AUDIO[R]
SW_AUDIO_R
SW_AUDIO_L

FROM/TO FRONT CABI
CD810
CH014001
W805 NC
W809 NC
W810 NC
W811 NC
CP004 (CD702) 003P-2100
C003 0.1 B
C042 0.01 B
C043 0.01 B
NC
C028 47P CH
C044 47P CH
C046 47P CH
R001 2.2K
R010 100
R009 100
C029 47P CH

AFT_0(L/H)
AFT_1(L/H)
DTV_RX
DTV_TX
DTV_RESET
SD-H
D_Y_OUT
D_C_OUT
TUNER_AUDIO(L)
TUNER_AUDIO(R)
SPDIF_OUT
TU_I2C_DATA
TU_I2C_CLK
RF_SW
SIF_OUT
IF_AGC
IF_OUT_1
IF_OUT_2

FROM/TO AV OUT CP2403B (CP2403)
1 D P.CON+2.6V
2 D P.CON+5V
3 GND
4 GND
5 ACIC+1.8V
6 AUDIO MUTE-L
7 GND
8 GND
9 D P.CON+3.3V
10 AFT_0
11 AFT_1
12 RX (DTV MAIN)
13 TX (DTV MAIN)
14 DTV_RESET
15 SD-H
16 V OUT
17 Y OUT
18 U OUT
19 AUDIO OUT L
20 AUDIO OUT R
21 D P.CON+9V
22 GND
23 GND
24 SPDIF OUT
25 TU I2C DATA
26 TU I2C CLK
27 RF SW
28 SIF OUT
29 F/E 1.8V
30 IF AGC
31 GND
32 GND
33 IF OUT1
34 IF OUT2

PCBD20
CEF199

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY 。

CAUTION: DIGITAL TRANSISTOR

CAUTION: DIGITAL TRANSISTOR

CRT/SVM SCHEMATIC DIAGRAM

(CRT PCB)

CRT BLOCK

FROM DEFLECTION
CP801B(CP801A)
52147-0510
1 180V
2 NC → NC
3 NC → NC
4 GND
5 HEATER

FROM CHROMA/IF
CP802B (CP802A)
A2001WV2-7P
1 P.CON+8V
2 GND(SIGNAL)
3 R.OUT
4 G.OUT
5 B.OUT
6 CLAMP_OFF
7 VM COIL

RED OUT Q801 KTC3199_Y
GREEN OUT Q803 KTC3199_Y
BLUE OUT Q802 KTC3199_Y
RED OUT Q804 KTC4217
GREEN OUT Q805 KTC4217
BLUE OUT Q806 KTC4217
R812 100
R820 100 1/4W
R821 100
R809 1.2K
R813 330
R814 1.2K
R816 330
R811 1.2K
R815 330
D810 1SS133
D811 1SS133
D812 1SS133
C811 390P CH
C810 390P CH
C809 430P CH
R817 68
R818 68
R819 68
C805 0.001 B
R801 220
R808 220
R810 220
D801 1SS133
D802 1SS133
D803 1SS133
L801 150uH 0607
L802 150uH 0607
L803 150uH 0607
R803 15K 2W
R807 15K 2W
R805 15K 2W
TP022 RED OUT
TP023 GREEN OUT
TP024 BLUE OUT
R802 2.7K 1/4W
R806 2.7K 1/4W
R804 2.7K 1/4W
W811
(W054) R822 2.2 1/2W
C802 2KV 0.001 B
SCREEN
FROM/TO DEFLECTION
CP806 005P-2100
FOCUS1
FOCUS2
FROM/TO DEFLECTION
CP803 (CD803)
A2361WV2-2P
CP805 (CD805)
A2361WV2-2P
J801_1 ISDW03S-F

FROM POWER
CP851B(CP851A)
52147-0410
4 P.CON+B
3 NC → NC
2 GND
1 P.CON+12V
R855 330 1/2W
R851 2.2 1/2W
C853 16V 47 YK
C804 100P CH
C854 160V 10 YK
C862 16V 47 YK
R872 1.2K
R870 1.5K
D855 1SS133
R877 68 1/2W
R879 2.7 1/2W
R856 1K
R859 2.7K
R864 39K
SWITCHING Q855 KTC3198
SWTCHING Q856 KTC3198
SWITCHING Q858 2SA2140
R868 82
C860 500V 0.0047 B
BUFFER Q854 KTC3198
SVM Q852 KTC3198
R863 3.9K
C857 0.001 B
D852 1SS133
R854 33K
R861 33K
R858 100
AMP Q853 2SC752(G)TM_Y
R867 10 1/2W
D853 1SS133
D854 1SS133
R865 56K
R866 2.2K
R873 68K 1/4W
B851 W5RH3.5X5X1.0
D858 1H3-E
R876 12K 1/4W
B853 W5RH3.5X5X1.0
C865 500V 150P B
R881 120 2W
R882 68K 1/4W
B852 W5RH3.5X5X1.0
D857 1H3-E
SWTCHING Q859 2SC5993
R869 82
C861 500V 0.0047 B
SWTCHING Q857 KTA1266
R871 1.5K
R875 1.2K
D856 1SS133
C859 100P CH
R878 68 1/2W
R880 2.7 1/2W
C863 16V 47 YK
C864 160V 10 YK
HS851 763WSA0029
R853 22K
C856 0.01 B
R857 470 1/4W
C855 560P CH
R860 33
R862 3.9K
FROM/TO VM COIL
CP852A(CP852B)
A2001WV2-3P
VM1 1
NC 2
VM2 3
1 1
2 2
3 3

SVM BLOCK

(VM COIL PCB)

FROM/TO CRT/SVM
CP852B (CP852A)
B2013H02-3P
1
2 NC
3
TO VM COIL
S851
S852
PCBD80
CEF204

PCB110
CCF075

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

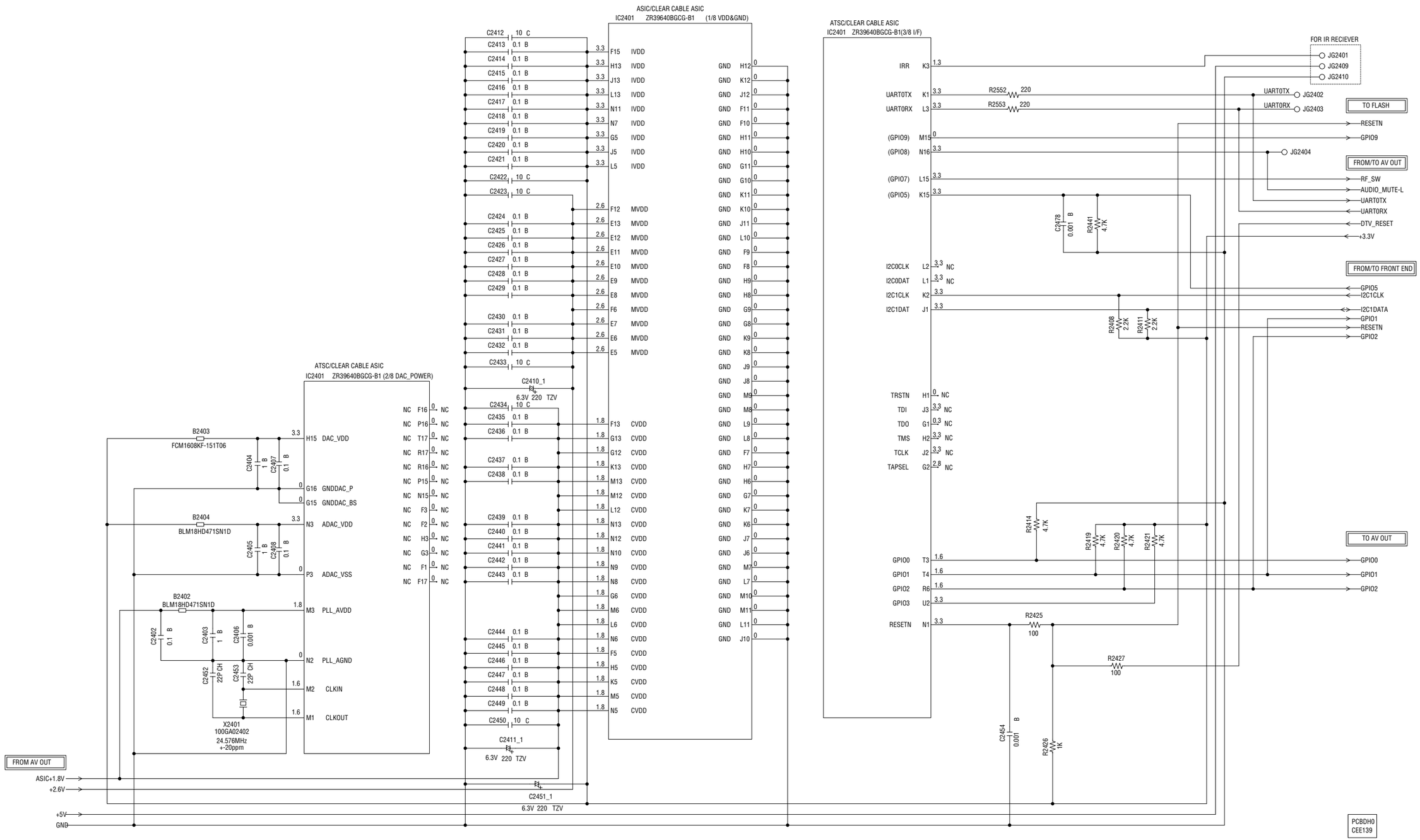
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY 。

ASIC SCHEMATIC DIAGRAM

(DIGITAL PCB)

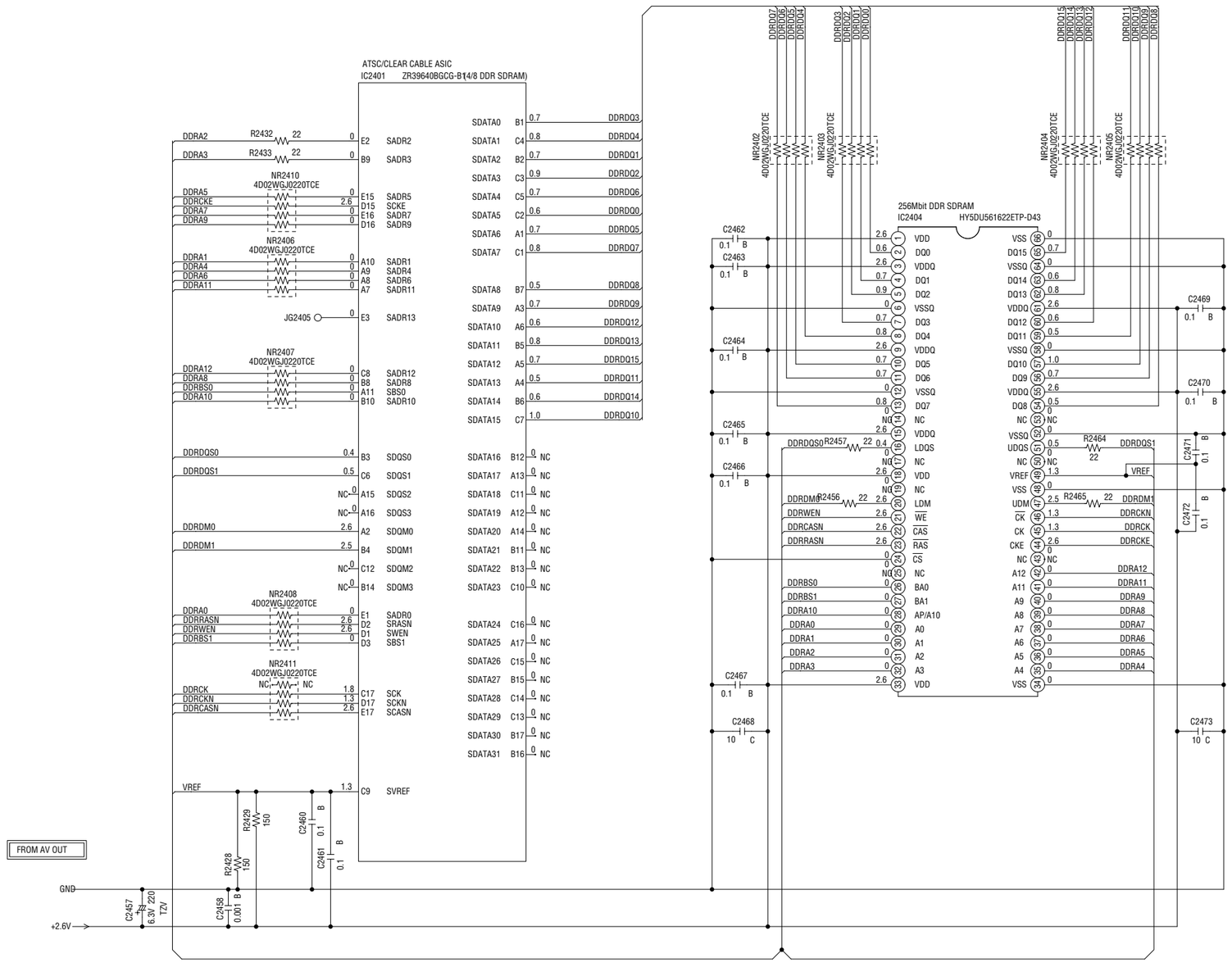


NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

SDRAM SCHEMATIC DIAGRAM

(DIGITAL PCB)



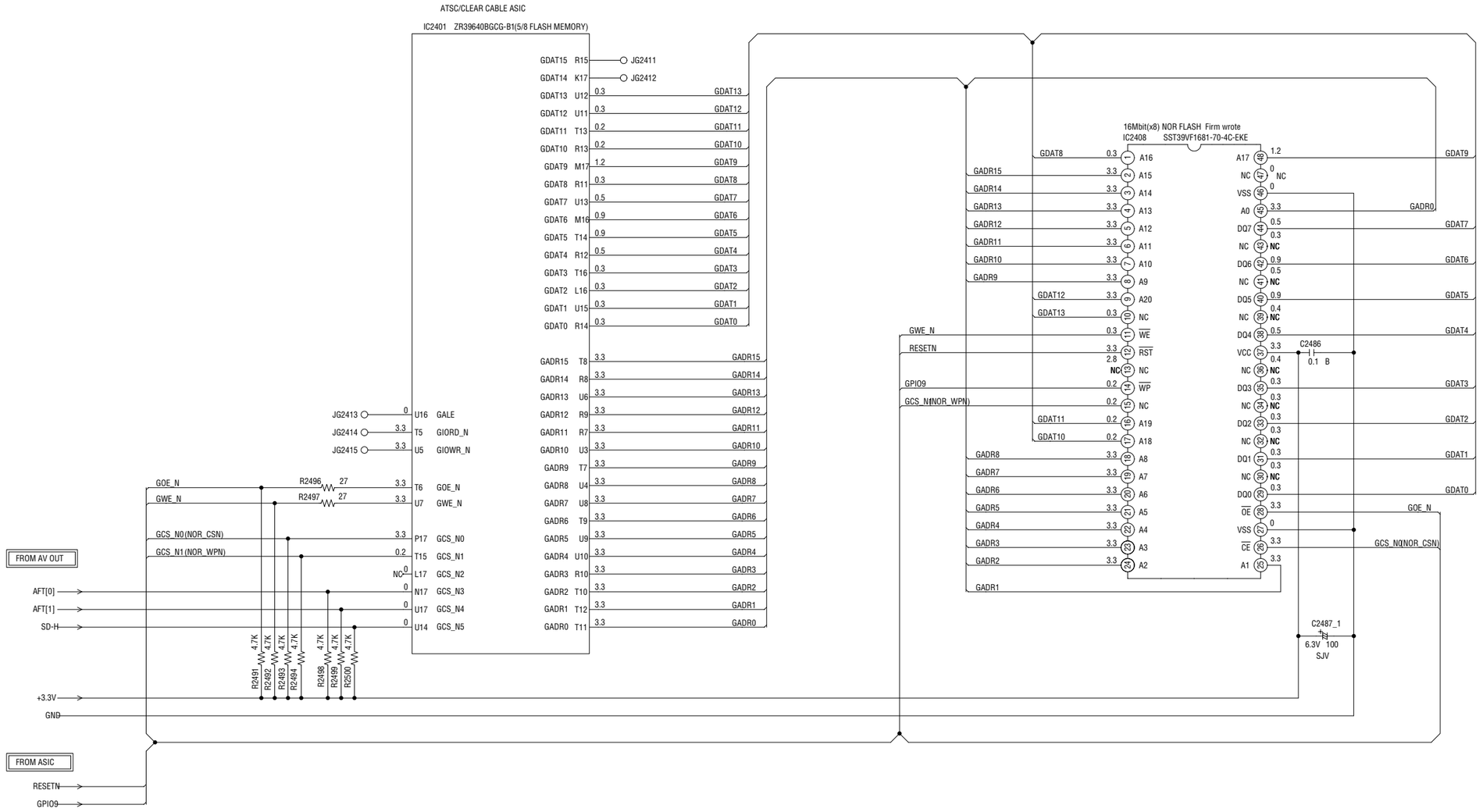
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

PCBDH0
CEE139

FLASH SCHEMATIC DIAGRAM

(DIGITAL PCB)



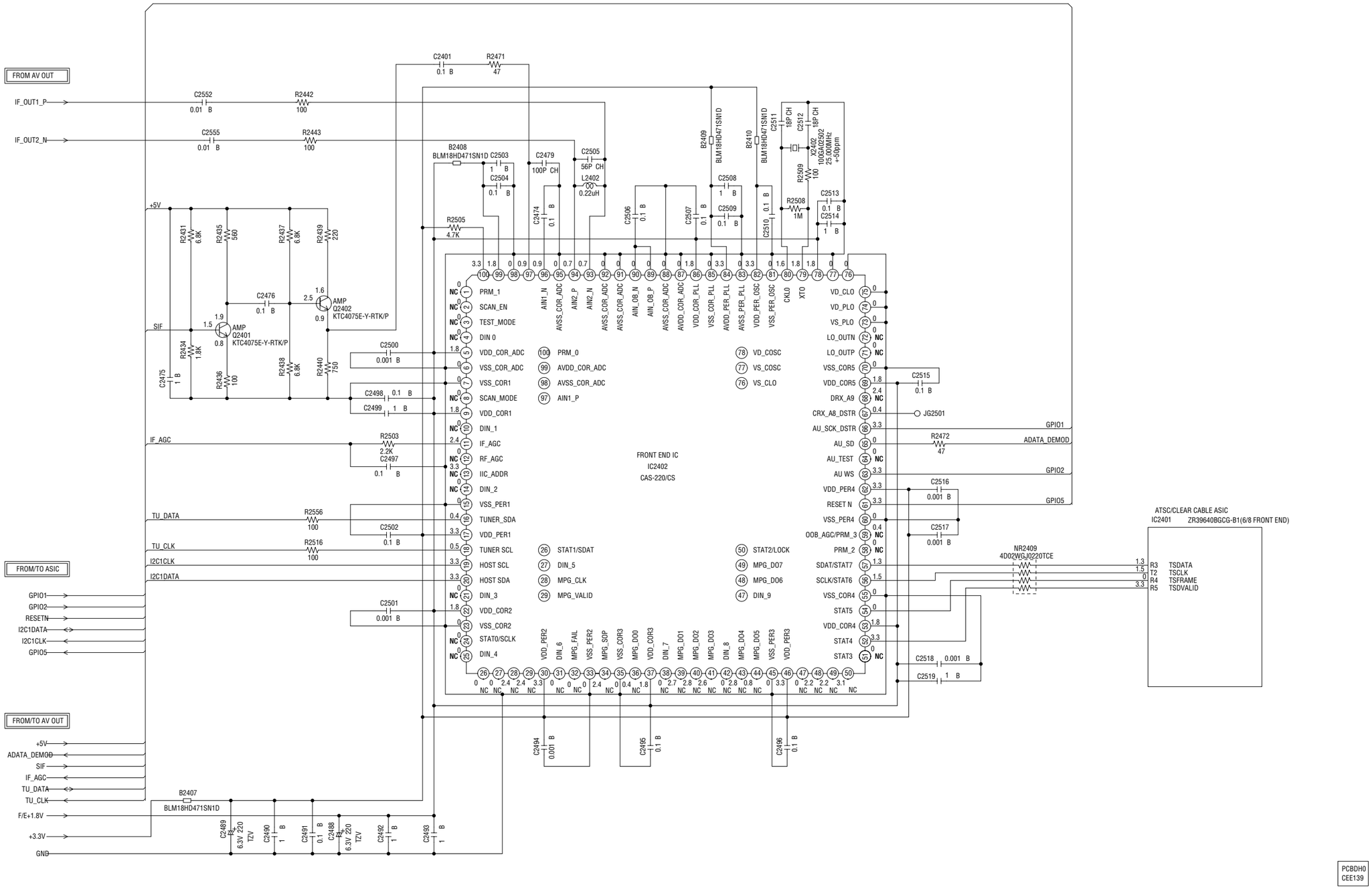
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

PCBDH0
CEE139

FRONT END SCHEMATIC DIAGRAM

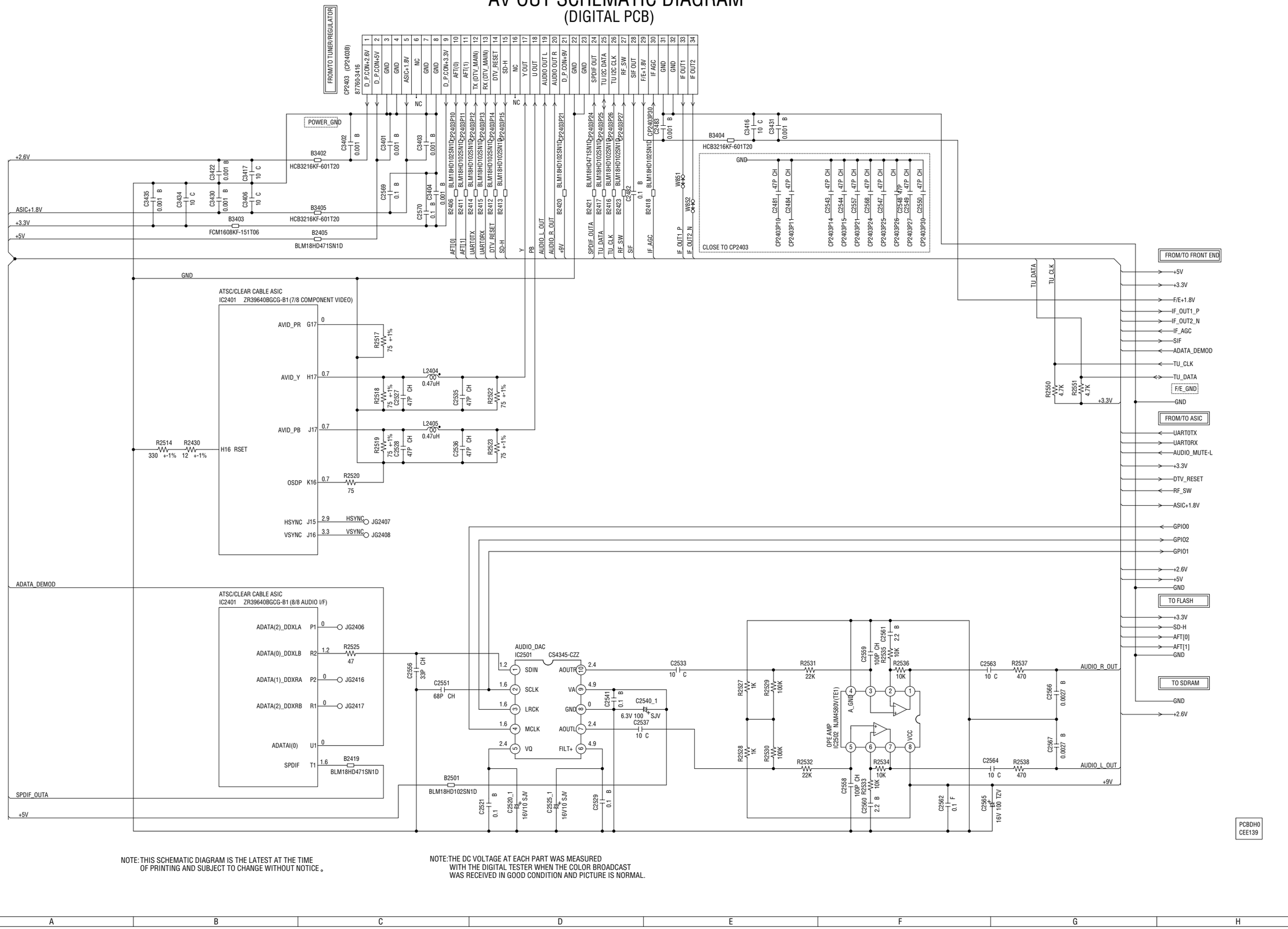
(DIGITAL PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

AV OUT SCHEMATIC DIAGRAM
(DIGITAL PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

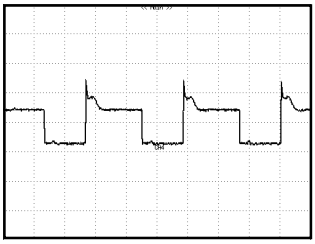
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

WAVEFORMS

DEFLECTION

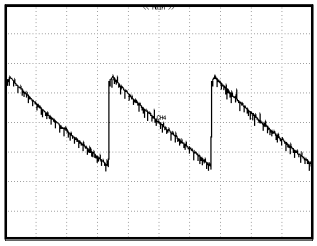
20µs
20.0V

⑮



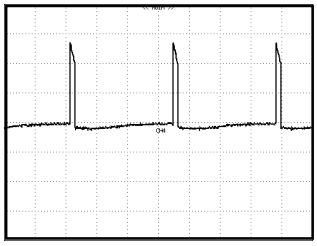
5ms
0.5V

⑯



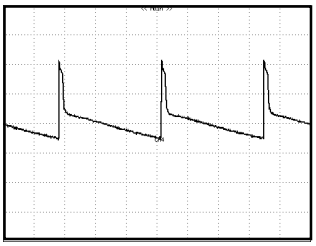
5ms
10.0V

⑰



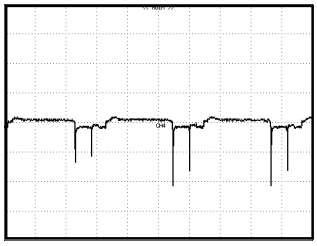
5ms
20.0V

⑱



20µs
10.0V

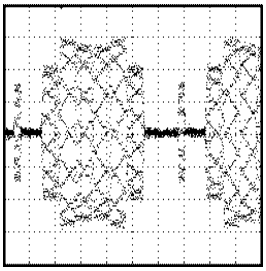
⑲



CHROMA/IF

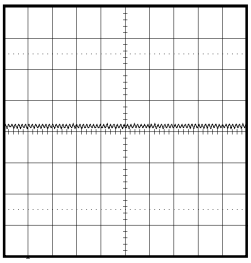
10µs
200mV

⑳



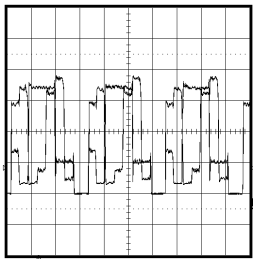
2µs
1V

㉑



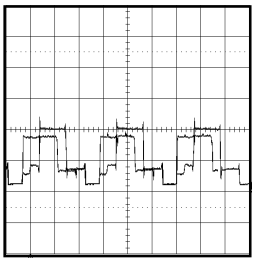
20µs
1V

㉒



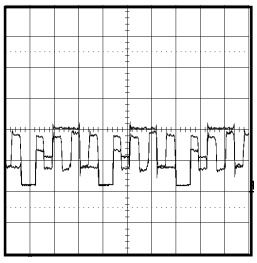
20µs
2V

㉓



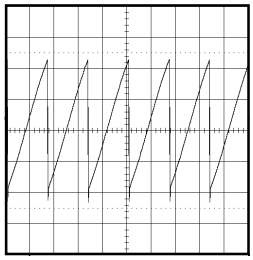
20µs
2V

㉔



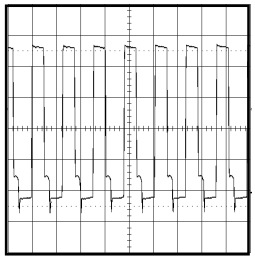
10ms
0.5V

㉕



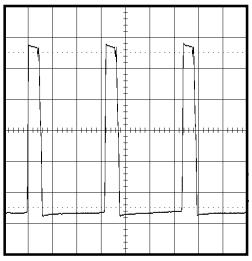
50µs
1V

㉖



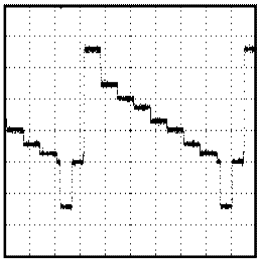
20µs
2V

㉗



10µs
200mV

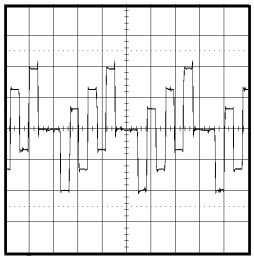
㉘



AV SW/SOUND AMP/TONE CTL

20µs
200mV

㉙



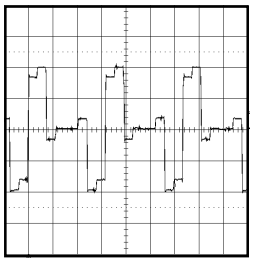
NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS

CRT/SVM

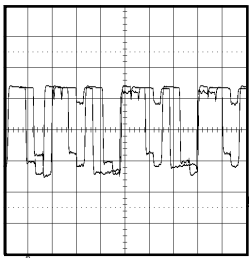
20µs
200mV

30



20µs
50V

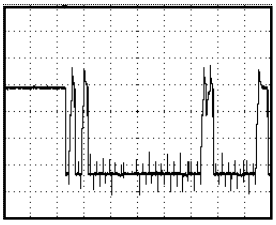
37



MICON

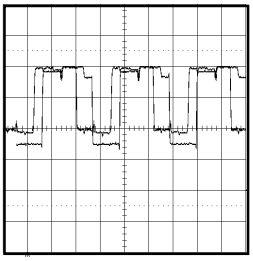
50µs
1V

31



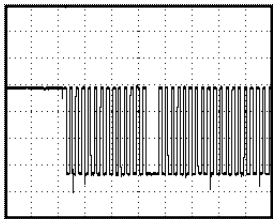
20µs
50V

38



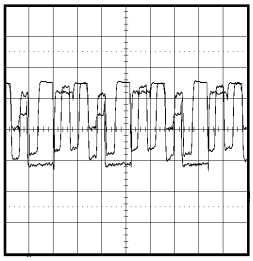
50µs
1V

32



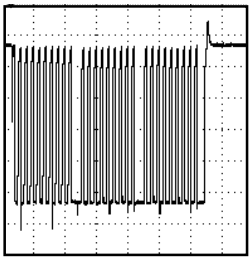
20µs
50V

39



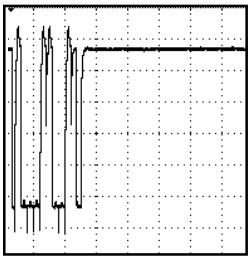
50µs
1V

33



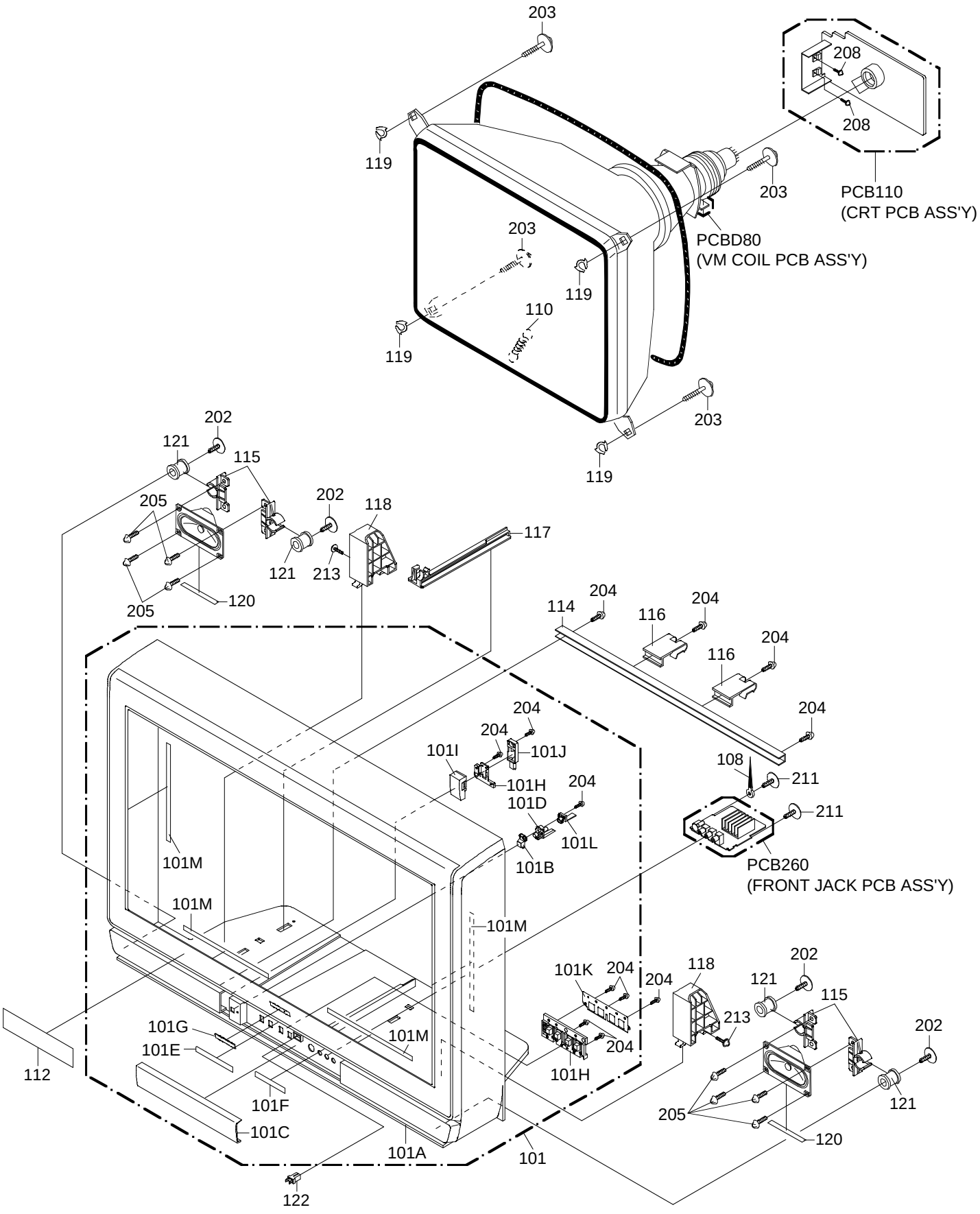
50µs
1V

34

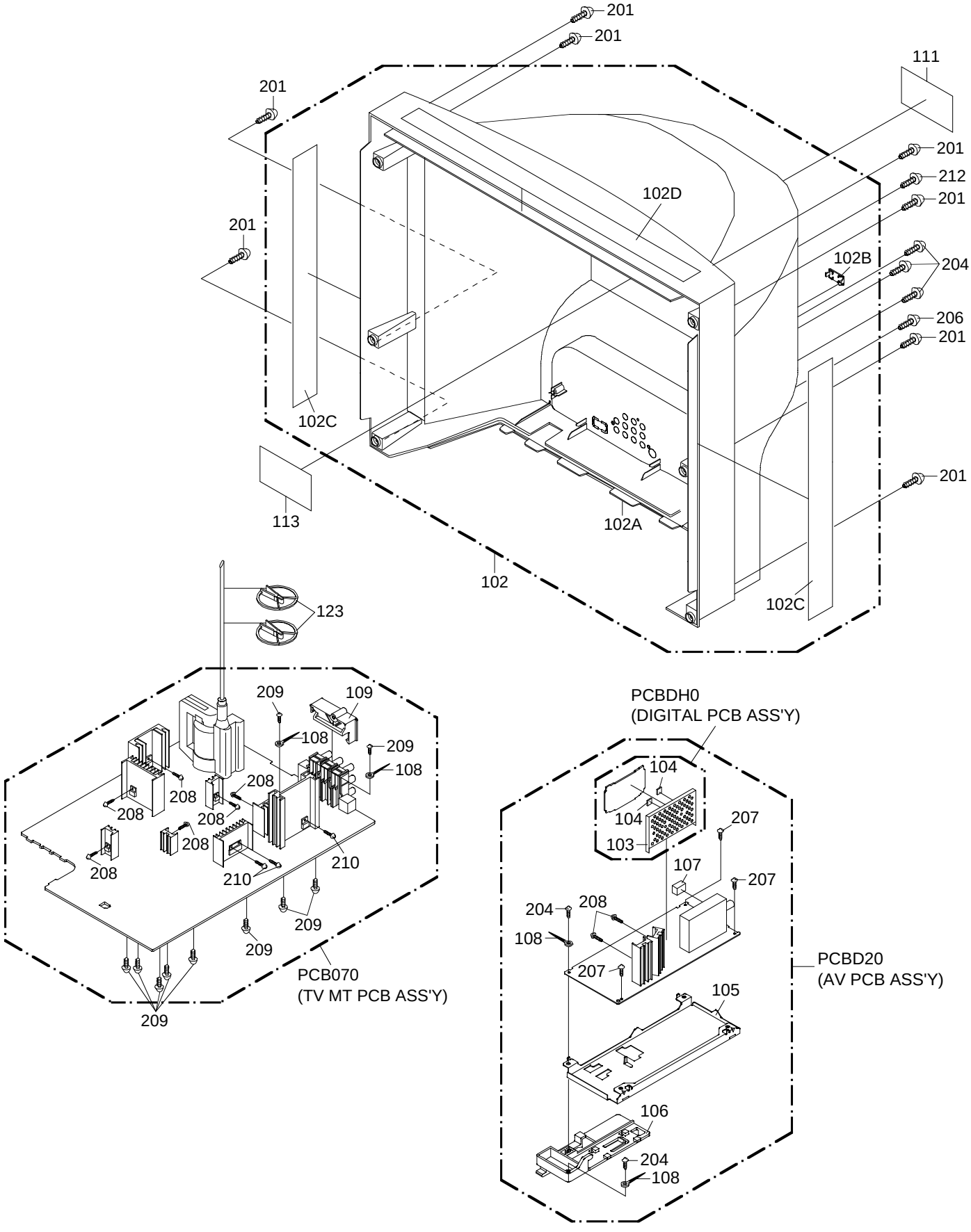


NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

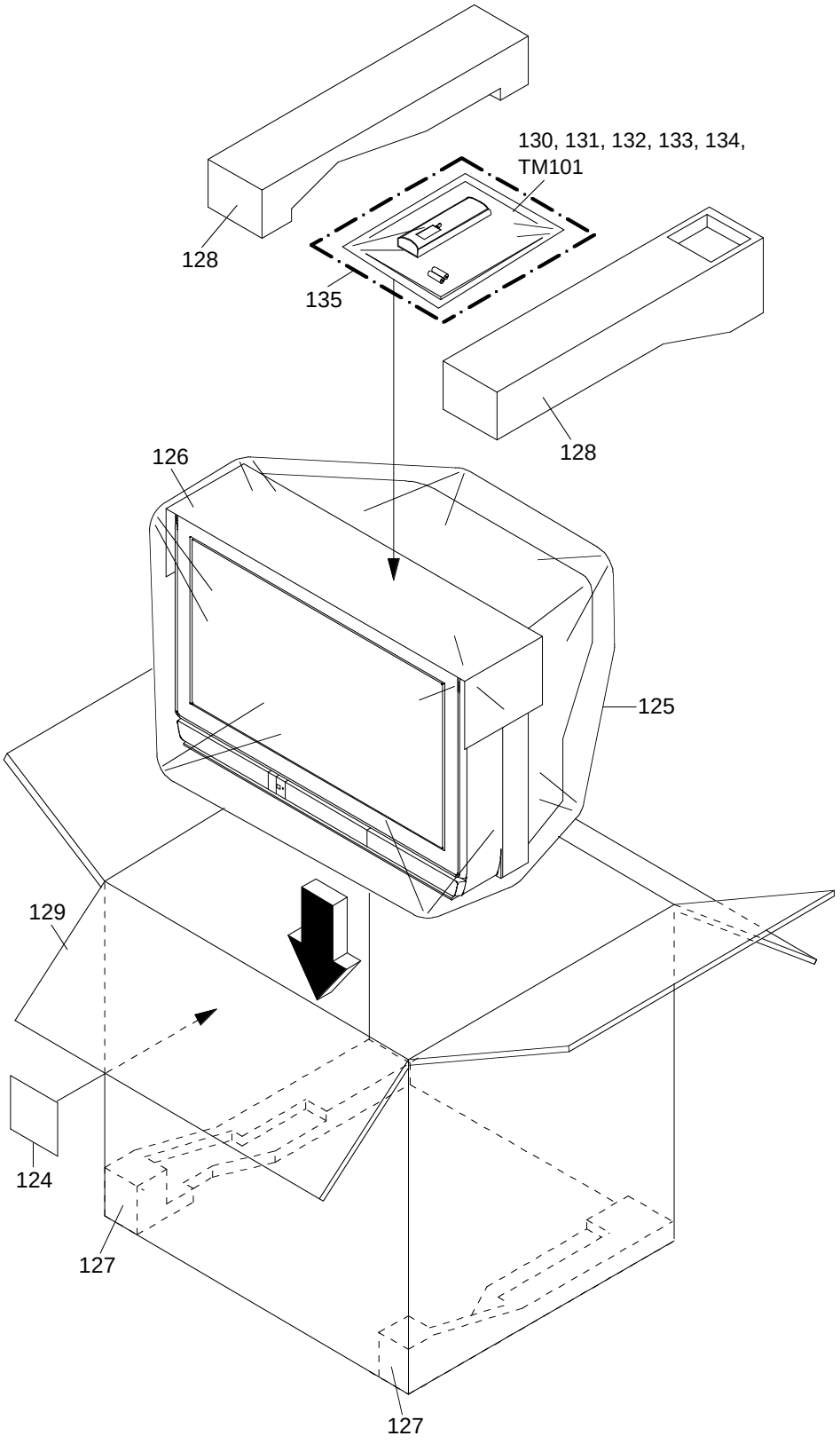
MECHANICAL EXPLODED VIEW



MECHANICAL EXPLODED VIEW



MECHANICAL EXPLODED VIEW
(PACKING DIAGRAM)



MECHANICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description
101	75003470	7A7010245A	FRONT CABI ASS'Y
101A	75003471	701WPBA075	CABINET FRONT
101B	72799403	711WPA0210	PLATE,FRONT
101C	75003472	712WPJ0965	DOOR
101D	72799464	713WPA0334	GUIDE,REMOCON
101E	72799568	7230007791	SHEET,BUTTON
101F	75003502	7230008157	AV LABEL
101G	72781985	7235490036	BADGE,BRAND
101H	75003473	735WPB0339	BUTTON FRAME
101I	75003474	735WPJ0251	BUTTON POWER
101J	72799819	738WPA0106	STOPPER BUTTON
101K	75003505	753WSA0172	SHIELD BUTTON
101L	72799910	761WPA0344	HOLDER,LED
101M	72796103	800WQ0A052	FELT SHEET
102	75003475	7A7020101A	BACK CABI ASS'Y
102A	75003476	702WPA1250	CABINET BACK
102B	72783574	706WPAA003	COVER CONNECTOR
102C	72798774	800WQ0A045	FELT SHEET
102D	72798776	800WQ0A050	FELT,SHEET
103	72783857	7G7520037A	SHIELD,BOTTOM ASS'Y
104	75003477	800WR00083	SHEET SILICONE
105	75003507	752WSA0588	PLATE,BOTTOM
106	75003508	761WPA0447	HOLDER,PCB
107	72798807	8965TS1010	CUSHION 65TS10-10(10*10*25)
108	72795699	899EFBA002	WIRING-CLIP
109	72783347	761WPA0424	HOLDER,JACK
110	72795687	741WUA0021	SPRING EARTH
111	75003478	7225490251	SHEET RATING
112	75003479	7230008158	POP LABEL
113	75003480	7260000363	SHEET CRT SERVICEMAN
114	72795678	752WSAA083	ANGLE,FRONT
115	72796254	761WPAA115	HOLDER SPEAKER
116	72799904	761WPA0294	COIL,HOLDER
117	72782471	761WPA0418	HOLDER,PCB RAIL
118	72783869	761WPA0419	HOLDER,CRT
119	72799963	769WSAA008	WASHER,CRT T=0.5
120	72781200	800WF00062	CUSHION 55*5*T1
121	72794733	801WR00001	DAMPER SPEAKER
122	72795058	890DL20000	DOOR LATCHES(DL2)
123	72794734	899HV3T000	HOLDER ANODE WIRE
124	75003481	7230008203	SHEET BARCODE
125	72795053	791WHAA118	FILM,BAG
126	72782503	791WHAA138	LIGHTRON SHEET
127	75003482	792WHAA215	PACKAGE BOTTOM
128	72799989	792WHA0552	PACKAGE,TOP
129	75003483	793WCD1782	GIFT BOX
130	72781630	JA4ND400	POLYBAG INSTRUCTION(RED CAUTION)
131	72781569	J3N51617A	REGISTRATION CARD
132	72784153	J3W60229A	INFORMATION SHEET(CHANNEL)
133	75002744	J3W60329A	INFORMATION SHEET(RRT)
134	75003484	J3Y90121B	INSTRUCTION BOOK(E/S)
135	75003514	A3Y9010975	INSTRUCTION BOOK KIT

MECHANICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description
201	72798795	8117540B0U	SCREW TAPPING(B0) TRUSS 4*20 CH
202	72781295	8162540A6U	SCREW TAPPING (BO) WASHER 18
203	72781286	8141H60D5U	SCREW,TAP TITE(P) GW20 6*45 CH HEXAGON
204	72798791	8110630A0U	SCREW TAP TITE(P) BRAZIER 3*10 CH
205	72798790	811063080U	SCREW TAP TITE(P) BRAZIER 3*8 CH
206	72781236	810763060U	SCREW TAP TITE(S) BRAZIER 3*6 CH
207	72798787	810923080U	SCREW TAP TITE(B) BIND 3*8 CH
208	72798789	8109I30A0U	SCREW TAP TITE(B) WH7 3*10 CH
209	72781251	810963080Q	SCREW TAP TITE(B) BRAZIER 3*8 STAINLESS
210	72798786	810763080U	SCREW TAP TITE(S) BRAZIER 3*8 CH
211	72781293	8159130A0U	SCREW TAPPING(B) WASHER12 PAN 3*10 CH
212	72781279	8117540A6U	SCREW TAPPING(B0) TRUSS 4*16 CH
213	72798793	8110E3080U	SCREW TAP TITE(P) WH10 3*8 CH

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
			RESISTORS	
⚠R002	72797928	R3X28B3R9J	R,METAL	3.9 OHM 3W
⚠R004	72794621	R3X28B010J	R,METAL OXIDE	1 OHM 3W
⚠R007	75003516	R5X2CDR47J	R,CEMENT	0.47 OHM 5W
⚠R410	72781693	R3K58A221J	R,METAL OXIDE	220 OHM 2W
⚠R416	72794597	R002T22R2J	RC	2.2 OHM 1/2W
⚠R420	72794597	R002T22R2J	RC	2.2 OHM 1/2W
⚠R426	72781722	R4K1T4472F	R,METAL	4.7K OHM 1/4W
⚠R434	72797994	R5X34F5R6J	R,CEMENT	5.6 OHM 10W
⚠R436	72781717	R4K1T4183F	R,METAL	18K OHM 1/4W
⚠R438	72798038	R6558A3R3J	R,FUSE	3.3 OHM 2W
⚠R439	75003517	R3K58A102J	R,METAL OXIDE	1K OHM 2W
⚠R441	72783394	R4K1T4153F	R,METAL	15K OHM 1/4W
⚠R452	72795507	R3X28A151J	R,METAL OXIDE	150 OHM 2W
R455	72798025	R65582680J	R,FUSE	68 OHM 1/2W
⚠R462	72797919	R3X28B221J	R,METAL OXIDE	220 OHM 3W
⚠R471	72781672	R3K581120J	R,METAL OXIDE	12 OHM 1W
⚠R475	72781672	R3K581120J	R,METAL OXIDE	12 OHM 1W
⚠R481	72795518	R655822R2J	R,FUSE	2.2 OHM 1/2W
⚠R483	72794614	R65582010J	R,FUSE	1 OHM 1/2W
⚠R484	72794614	R65582010J	R,FUSE	1 OHM 1/2W
R495	72781666	R0G3K2221K	RC	220 OHM 1/2W
⚠R499	72783956	R3K581220J	R,METAL OXIDE	22 OHM 1W
⚠R500	72794631	R0G3K2275K	RC	2.7M OHM 1/2W
⚠R501	72797976	R5X2CE010J	R,CEMENT	1 OHM 7W
⚠R502	72781694	R3K58A331J	R,METAL OXIDE	330 OHM 2W
⚠R510	72781719	R4K1T4272F	R,METAL	2.7K OHM 1/4W
⚠R520	72795500	R002T2155J	RC	1.5M OHM 1/2W
⚠R522	75003518	R3K58A100J	R,METAL OXIDE	10 OHM 2W
⚠R527	72796440	R3X28AR68J	R,METAL OXIDE	0.68 OHM 2W
⚠R533	72794657	R002T4102J	RC	1K OHM 1/4W
⚠R534	72797864	R3X181R12J	R,METAL OXIDE	0.12 OHM 1W
R550	72797916	R3X28B1R2J	R,METAL OXIDE	1.2 OHM 3W
⚠R603	72782609	R3X18A390J	R,METAL OXIDE	39 OHM 2W
⚠R650	72783396	R3X28B8R2J	R,METAL OXIDE	8.2 OHM 3W
⚠R651	72783396	R3X28B8R2J	R,METAL OXIDE	8.2 OHM 3W
⚠R803	72796459	R3X18A153J	R,METAL OXIDE	15K OHM 2W
⚠R805	72796459	R3X18A153J	R,METAL OXIDE	15K OHM 2W
⚠R807	72796459	R3X18A153J	R,METAL OXIDE	15K OHM 2W
⚠R855	72794663	R65582331J	R,FUSE	330 OHM 1/2W
⚠R881	72797873	R3X18A121J	R,METAL OXIDE	120 OHM 2W
			CAPACITORS	
C005	72797374	E02LF1222M	CE	2200 UF 10V
C026	72797374	E02LF1222M	CE	2200 UF 10V
⚠C408	72794381	E5EZF3222M	CE	2200 UF 25V
⚠C412	72797717	P4N8FK102H	CMPP	0.001 UF 1.5KV
C413	72794398	E02LF4102M	CE	1000 UF 35V
C418	72796346	P4J7F3274J	CMPP	0.27 UF 250V PMS
⚠C420	72797718	P4N8FK123H	CMPP	0.012 UF 1.5KV
⚠C421	72797680	P3N1F5273J	CPP	0.027 UF 630V
⚠C426	72794394	E5EZFD220M	CE	22 UF 250V
C444	72797725	P4N8FK682H	CMPP	0.0068UF 1.5KV
C446	72796347	P4N8FK103H	CMPP	0.01 UF 1.5KV
C447	72794397	E736F56R8M	CE	6.8 UF 50V
C448	72781644	P411F4473J	CMPP	0.047 UF 400V ECWF
C449	75003485	P4J7F3184J	CMPP	0.18 UF 250V PMS
C450	72795583	C03L0R7H3K	CC	0.0022UF 2KV R
⚠C454	72797508	E62DFB470M	CE	47 UF 160V
⚠C501	72795574	E02LF3222M	CE	2200 UF 25V
⚠C502	72794393	C03L0R713K	CC	0.001 UF 2KV R
⚠C503	72794393	C03L0R713K	CC	0.001 UF 2KV R
⚠C505	72794401	P2122B334M	CMP	0.33 UF 275V ECQUL
⚠C506	72795566	P2122B224M	CMP	0.22 UF 275V ECQUL
⚠C507	72794402	E51DFC821M	CE	820 UF 200V
⚠C508	72796318	CC3LE0MH3M	CC	0.0022UF 250V
⚠C513	72796319	CC3LE0M13M	CC	0.001 UF 250V
⚠C514	72781398	E61FT2681D	CE	680 UF 16V
⚠C517	72795583	C03L0R7H3K	CC	0.0022UF 2KV R
⚠C519	72796319	CC3LE0M13M	CC	0.001 UF 250V
⚠C521	72794411	E62NFC221M	CE	220 UF 200V
C526	75003486	CQG0B0414K	CC	0.01 UF 50V B
⚠C527	72796330	E02LF2222M	CE	2200 UF 16V
⚠C528	72781392	E61FF1222D	CE	2200 UF 10V
C535	72794393	C03L0R713K	CC	0.001 UF 2KV R
C802	72795578	C0JBB0713K	CC	0.001 UF 2KV B
C1011	72796330	E02LF2222M	CE	2200 UF 16V

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
			DIODES	
D003	72795626	D2WXN40050	DIODE,SILICON	1N4005-EIC
D101	72783214	D9WU05R62B	DIODE,ZENER	MTZJ5.6B-EIC
D103	72783213	D9WU03R92B	DIODE,ZENER	MTZJ3.9B-EIC
D104	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D105	72783213	D9WU03R92B	DIODE,ZENER	MTZJ3.9B-EIC
D106	72783214	D9WU05R62B	DIODE,ZENER	MTZJ5.6B-EIC
D108	72783214	D9WU05R62B	DIODE,ZENER	MTZJ5.6B-EIC
D109	72795529	0021721150	LED	SLR-342VCT32
D110	72795627	D2WXSB1400	DIODE,SCHOTTKY	SB140-EIC
D111	72795627	D2WXSB1400	DIODE,SCHOTTKY	SB140-EIC
D112	72783214	D9WU05R62B	DIODE,ZENER	MTZJ5.6B-EIC
D113	72783214	D9WU05R62B	DIODE,ZENER	MTZJ5.6B-EIC
D114	72783214	D9WU05R62B	DIODE,ZENER	MTZJ5.6B-EIC
D401	72794488	D2WT011E10	DIODE,SILICON	11E1-EIC
D402	72794488	D2WT011E10	DIODE,SILICON	11E1-EIC
D403	72781366	D9WU03302B	DIODE,ZENER	MTZJ33B-EIC
D404	72781368	D9WU05R12B	DIODE,ZENER	MTZJ5.1B-EIC
⚠D405	72794472	D2WTAU02A0	DIODE,SILICON	AU02A-EIC
⚠D406	72783214	D9WU05R62B	DIODE,ZENER	MTZJ5.6B-EIC
⚠D407	72794472	D2WTAU02A0	DIODE,SILICON	AU02A-EIC
⚠D408	72794470	D2CF0715L0	DIODE,SILICON	ERD07-15L50
⚠D409	72783412	D2CF2016J0	DIODE,SILICON	FE201-6J14
D410	72781366	D9WU03302B	DIODE,ZENER	MTZJ33B-EIC
⚠D411	72794472	D2WTAU02A0	DIODE,SILICON	AU02A-EIC
D412	72781360	D2WX0216E0	DIODE,SILICON	RGP02-16E
D413	72781360	D2WX0216E0	DIODE,SILICON	RGP02-16E
⚠D414	72794488	D2WT011E10	DIODE,SILICON	11E1-EIC
⚠D415	72794488	D2WT011E10	DIODE,SILICON	11E1-EIC
D416	72783366	D9WU01502B	DIODE,ZENER	MTZJ15B-EIC
D417	72783366	D9WU01502B	DIODE,ZENER	MTZJ15B-EIC
D422	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D423	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D424	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
⚠D501	72794473	D2WTRM11C0	DIODE,SILICON	RM11C-EIC
⚠D502	72794473	D2WTRM11C0	DIODE,SILICON	RM11C-EIC
⚠D503	72794473	D2WTRM11C0	DIODE,SILICON	RM11C-EIC
⚠D504	72794473	D2WTRM11C0	DIODE,SILICON	RM11C-EIC
⚠D505	72794480	D28T21DQN9	DIODE,SCHOTTKY	21DQ09N-TA2B1
⚠D506	75003522	D2LXN49370	DIODE,FAST RECOVERY	1N4937-F
D507	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D508	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D509	72781365	D9WU02202B	DIODE,ZENER	MTZJ22B-EIC
⚠D510	72783412	D2CF2016J0	DIODE,SILICON	FE201-6J14
⚠D511	75003522	D2LXN49370	DIODE,FAST RECOVERY	1N4937-F
⚠D512	72783906	D2LXSR2900	DIODE,SCHOTTKY	SR290-F
D513	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D514	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D515	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D516	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D519	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D520	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D521	72781368	D9WU05R12B	DIODE,ZENER	MTZJ5.1B-EIC
⚠D522	72794484	DOU002720M	DIODE,VARISTA	DSS-272M-S00B
⚠D523	72783211	D9WU01802B	DIODE,ZENER	MTZJ18B-EIC
D524	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D525	72783214	D9WU05R62B	DIODE,ZENER	MTZJ5.6B-EIC
⚠D526	72795544	D6E027110A	DIODE,VARISTA	ENE271D-10A
D528	72781367	D9WU03R32B	DIODE,ZENER	MTZJ3.3B-EIC
⚠D529	72783906	D2LXSR2900	DIODE,SCHOTTKY	SR290-F
D531	72781366	D9WU03302B	DIODE,ZENER	MTZJ33B-EIC
D532	75003523	D9WU02002B	DIODE,ZENER	MTZJ20B-EIC
⚠D534	72781353	D27A85T400	DIODE,SCHOTTKY	RB085T-40
D535	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
⚠D538	72783368	D28F21DQN9	DIODE,SCHOTTKY	21DQ09N-FC4
D541	72783214	D9WU05R62B	DIODE,ZENER	MTZJ5.6B-EIC
D542	75003524	D9WU07R52B	DIODE,ZENER	MTZJ7.5B-EIC
⚠D543	72797313	D6CE24110A	DIODE,VARISTA	ENE241D-10A-Q6
D604	72783214	D9WU05R62B	DIODE,ZENER	MTZJ5.6B-EIC
D606	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D611	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D612	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D613	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D614	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D615	72794491	D1VT001330	DIODE,SILICON	1SS133T-77

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
			DIODES	
D616	72783764	D9WU03902B	DIODE,ZENER	MTZJ39B-EIC
D619	72783769	D9WU09R12B	DIODE,ZENER	MTZJ9.1B-EIC
D620	72781369	D9WU06R82B	DIODE,ZENER	MTZJ6.8B-EIC
D621	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D702	72781369	D9WU06R82B	DIODE,ZENER	MTZJ6.8B-EIC
D703	72781369	D9WU06R82B	DIODE,ZENER	MTZJ6.8B-EIC
D704	72781369	D9WU06R82B	DIODE,ZENER	MTZJ6.8B-EIC
D706	72781364	D9WU01202B	DIODE,ZENER	MTZJ12B-EIC
D801	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D802	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D803	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D810	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D811	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D812	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D852	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D853	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D854	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D855	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D856	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
D857	72783759	D4AT01H3E0	DIODE,RECTIFIER	1H3-E
D858	72783759	D4AT01H3E0	DIODE,RECTIFIER	1H3-E
D1001	72794491	D1VT001330	DIODE,SILICON	1SS133T-77
			ICS	
IC001	72783369	I55J07W660	IC	TC7W66FU(TE12L,F)
⚠IC002	72781440	I07F0C0WF0	IC	BA00BC0WFP-E2
⚠IC003	72781440	I07F0C0WF0	IC	BA00BC0WFP-E2
⚠IC004	72783370	I0GA9VK020	IC	PQ070VK02FZH
⚠IC005	72783370	I0GA9VK020	IC	PQ070VK02FZH
IC101	75003487	S3Z001SM01	MEMORY DATA	OEC7161A
IC102	72795101	I9UF032290	IC	PST3229NR
IC199	75003488	S3Z001SE01	MEMORY DATA	AT24C128N-10SU-1.8
IC301	72783378	I5AFF11730	IC	NJW1173V(TE1)
⚠IC401	72794507	I03TD80410	IC	LA78041
⚠IC403	72797545	I03S065100	IC	LA6510
⚠IC404	72794512	000220002W	PHOTO COUPLER	PS2561AL1-1-V(W)
⚠IC501	72795905	I1KA78R090	IC	KIA278R09PI
⚠IC504	72794512	000220002W	PHOTO COUPLER	PS2561AL1-1-V(W)
⚠IC506	72794508	I1KJ9A431A	IC	KIA431A-AT
IC601	72783380	I03FC6327A	IC	LA76327M-A-MPB-E
IC603	72797548	I05DD13170	IC	TA1317ANG
IC701	72783381	I0QF027500	IC	NJM2750M(TE1)
⚠IC1001	72795536	I0FSP7822A	IC	AN17822A
IC1501	72797544	I03FE76605	IC	LA76605M-TLM-E
IC2401	72783373	ICQK039640	IC	ZR39640BGCG-B1
IC2402	72783374	IFYK002200	IC	CAS-220/CS
IC2404	72783776	ICLJ022ET5	IC	HY5DU561622ETP-D43
IC2408	75003489	S3Z001SF01	MEMORY DATA	SST39VF1681-70-4C-EKE
IC2501	72783377	I1FF043450	IC	CS4345-CZZ
IC2502	72797569	I0QF0580V0	IC	NJM4580V(TE1)
			TRANSISTORS	
Q002	72795962	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q003	72798325	TAAT01273Y	TRANSISTOR,SILICON	KTA1273_Y
Q004	72794567	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q005	72783390	T82A03841Q	TRANSISTOR,SILICON	2SC3841-T1B_T63
Q006	72783390	T82A03841Q	TRANSISTOR,SILICON	2SC3841-T1B_T63
Q007	72783390	T82A03841Q	TRANSISTOR,SILICON	2SC3841-T1B_T63
Q009	72795963	TPAAB05001	COMPOUND TRANSISTOR	KRA102SRTK
Q010	72794567	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q101	72795481	T6RA015300	TRANSISTOR,SILICON	2SA1530A-T1
Q102	72795481	T6RA015300	TRANSISTOR,SILICON	2SA1530A-T1
Q103	72795479	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1
Q104	72794570	TCAT03209Y	TRANSISTOR,SILICON	KTC3209_Y-AT
Q105	72796429	TNRAC05003	COMPOUND TRANSISTOR	RT1N241C-T112-1
Q106	72795481	T6RA015300	TRANSISTOR,SILICON	2SA1530A-T1
Q107	72795481	T6RA015300	TRANSISTOR,SILICON	2SA1530A-T1
⚠Q402	72794561	TCAT03227Y	TRANSISTOR,SILICON	KTC3227_Y-AT
Q404	72795479	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1
⚠Q405	72794562	TD50026380	TRANSISTOR,SILICON	2SD2638(OEC)
⚠Q406	72798324	TAAT012714	TRANSISTOR,SILICON	KTA1271_Y-AT
Q407	72795479	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1
Q408	72795479	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1
⚠Q409	72794563	TC30041590	TRANSISTOR,SILICON	2SC4159(D,E)
Q410	72781788	T230002010	TRANSISTOR,FIELD EFF	ECT 2SK2010
Q411	72795479	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1
Q412	72794577	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
			TRANSISTORS	
Q413	72795479	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1
Q414	72795479	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1
⚠Q415	72798324	TAAT012714	TRANSISTOR,SILICON	KTA1271_Y-AT
Q416	72781794	TC3F046340	TRANSISTOR,SILICON	2SC4634
⚠Q502	72798351	TJXG15NK50	FET	STP15NK50ZFP
⚠Q503	72795475	TA3T1371A0	TRANSISTOR,SILICON	2SA1371(D,E)-AE
Q504	72794577	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)
⚠Q505	72795474	TC3T029090	TRANSISTOR,SILICON	2SC2909(S,T)-AA
Q506	72795479	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1
Q507	72796427	TNRAB05004	COMPOUND TRANSISTOR	RT1N141C-T112-1
⚠Q508	72798323	TAAT01241Y	TRANSISTOR,SILICON	KTA1241_Y-AT
Q509	72794577	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)
Q510	72795481	T6RA015300	TRANSISTOR,SILICON	2SA1530A-T1
⚠Q512	72794569	TA3T016240	TRANSISTOR,SILICON	2SA1624-AA
⚠Q514	72795476	TCAT032034	TRANSISTOR,SILICON	KTC3203_Y-AT
Q601	72796427	TNRAB05004	COMPOUND TRANSISTOR	RT1N141C-T112-1
Q602	72794570	TCAT03209Y	TRANSISTOR,SILICON	KTC3209_Y-AT
Q603	72794578	TAATA12660	TRANSISTOR,SILICON	KTA1266-AT(Y,GR)
Q604	72795479	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1
Q605	72796425	TPRAB05002	COMPOUND TRANSISTOR	RT1P141C-T112-1
Q606	72795479	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1
Q607	72794570	TCAT03209Y	TRANSISTOR,SILICON	KTC3209_Y-AT
Q608	72794570	TCAT03209Y	TRANSISTOR,SILICON	KTC3209_Y-AT
Q609	72795479	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1
Q610	72795479	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1
⚠Q611	72794570	TCAT03209Y	TRANSISTOR,SILICON	KTC3209_Y-AT
Q614	72795479	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1
Q615	72795481	T6RA015300	TRANSISTOR,SILICON	2SA1530A-T1
Q616	72795479	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1
Q701	72795479	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1
⚠Q801	72794573	TCATC3199Y	TRANSISTOR,SILICON	KTC3199_Y-AT
⚠Q802	72794573	TCATC3199Y	TRANSISTOR,SILICON	KTC3199_Y-AT
⚠Q803	72794573	TCATC3199Y	TRANSISTOR,SILICON	KTC3199_Y-AT
⚠Q804	72794574	TCA0042170	TRANSISTOR,SILICON	KTC4217(O,Y)
⚠Q805	72794574	TCA0042170	TRANSISTOR,SILICON	KTC4217(O,Y)
⚠Q806	72794574	TCA0042170	TRANSISTOR,SILICON	KTC4217(O,Y)
Q852	72794577	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)
Q853	72794576	TCUT0752GY	TRANSISTOR,SILICON	2SC752(G)TM_Y(TP2
Q854	72794577	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)
Q855	72794577	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)
Q856	72794577	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)
Q857	72794578	TAATA12660	TRANSISTOR,SILICON	KTA1266-AT(Y,GR)
Q858	72794579	TA10021400	TRANSISTOR,SILICON	2SA2140
Q859	72794580	TC10059930	TRANSISTOR,SILICON	2SC5993
Q1001	72795479	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1
Q1503	72795479	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1
Q1507	72795479	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1
Q1508	72795479	T8RA030520	TRANSISTOR,SILICON	2SC3052-T1
Q2401	72783391	TCAA040754	TRANSISTOR,SILICON	KTC4075E-Y-RTK/P
Q2402	72783391	TCAA040754	TRANSISTOR,SILICON	KTC4075E-Y-RTK/P
			COILS &TRANSFORMERS	
L001	72794526	02167F220J	COIL	22 UH
L002	72796088	02AHB9A972	CORE,FERRITE	W5T29X7.5X19
L003	72794540	02167F101J	COIL	100 UH
L004	72794526	02167F220J	COIL	22 UH
L301	72794526	02167F220J	COIL	22 UH
L401	72782568	02D3000057	COIL,CHOKE	ELC18B501LN
L402	72782055	022K00051A	COIL,LINEARITY	311015011
L403	72796647	02D1000001	COIL	ELC16B501EN
L404	75003490	02D3000091	COIL,CHOKE	ELC18B222LM
L405	72796650	02D3000063	COIL,CHOKE	ELC18B151LK
⚠L501	72796639	029X000098	COIL,LINE FILTER	SS28H-20075
L502	72796087	02167E100K	COIL	10 UH
L503	72783898	028R300005	COIL,DEGAUSS	8R300005
L601	72794540	02167F101J	COIL	100 UH
L602	72796407	02167D101K	COIL	100 UH
L701	72796088	02AHB9A972	CORE,FERRITE	W5T29X7.5X19
L801	72794539	02167D151K	COIL	150 UH
L802	72794539	02167D151K	COIL	150 UH
L803	72794539	02167D151K	COIL	150 UH
L1511	72795932	02167F150J	COIL	15 UH
L1512	72796571	021LA6220J	COIL	22 UH
L2402	72783383	021AS9224J	COIL	0.22 UH
L2404	72783384	0216SDR47J	COIL	0.47 UH
L2405	72783384	0216SDR47J	COIL	0.47 UH

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
			COILS &TRANSFORMERS	
T401	72794690	0450190171	TRANS,HORIZONTAL DRIVE	ETH19Y206AY
⚠T402	72798984	0486290014	TRANSFORMER,PULSE	86290014
⚠T501	75003528	0481420814	TRANSFORMER,SWITCHING	81420814
			JACKS	
J701	72794518	060J431020	RCA JACK	MSP-213V2-432_NI_LF
J702	72783793	063E700012	JACK	S4-25SZ
J703	72783382	060J411045	RCA JACK	MSP-382V-12_NI_FE_LF
J704	72795493	060J411032	RCA JACK	MSP-213V1-652_NI_LF
J705	72783794	060K421056	RCA JACK	AV-5A-66H
J706	72783795	060K421058	RCA JACK	AV-5A-68H
J707	72783796	060K421057	RCA JACK	AV-5A-67H
J708	72798996	060J431022	RCA JACK	MSP-213V2-732_NI_LF
⚠J801	72799009	066F130022	SOCKET,CATHODE RAY TUBE	ISDW03S-F
			SWITCHES	
SW101	72794688	0504101T34	SWITCH,TACT	EVQ21505R
SW102	72794688	0504101T34	SWITCH,TACT	EVQ21505R
SW103	72794688	0504101T34	SWITCH,TACT	EVQ21505R
SW104	72794688	0504101T34	SWITCH,TACT	EVQ21505R
SW105	72794688	0504101T34	SWITCH,TACT	EVQ21505R
			VARIABLE RESISTORS	
VR501	72798392	V1K6314BTE	VOLUME,SEMI FIXED	NVG6TLTAB103
			P.C.BOARD ASSEMBLIES	
PCB070	75003491	A3Z001S070	TV MT PCB ASS'Y	CMF089A
PCB110	75003492	A3Z001S110	CRT PCB ASS'Y	CCF075A
PCB260	75003493	A3Z001S260	FRONT JACK PCB ASS'Y	CEF200A
PCBD20	75003494	A3Z001SD20	AV PCB ASS'Y	CEF199A
PCBD80	75003495	A3Z001SD80	VM COIL PCB ASS'Y	CEF204A
PCBDH0	75003496	A3Z001SDH0	DIGITAL PCB ASS'Y	CEE139B
			MISCELLANEOUS	
B001	72783356	024HC51023	CORE,BEADS	FCM1608KF-102T02
B401	72794356	024HT03564	CORE,BEADS	W4BRH3.5X6X1.0
B403	72794355	024HT03563	CORE,BEADS	W4BRH3.5X6X1.0X2
B405	72794356	024HT03564	CORE,BEADS	W4BRH3.5X6X1.0
⚠B501	72794355	024HT03563	CORE,BEADS	W4BRH3.5X6X1.0X2
B502	72794357	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
⚠B504	72794357	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B701	72783359	024HC56005	CORE,BEADS	FCM1608CF-600T06
B702	72783359	024HC56005	CORE,BEADS	FCM1608CF-600T06
B851	72794357	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B852	72794357	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B853	72794357	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B1502	72783356	024HC51023	CORE,BEADS	FCM1608KF-102T02
B2402	75003535	024AC5471S	CORE,BEADS	BLM18HD471SN1D
B2403	72783357	024HC51513	CORE,BEADS	FCM1608KF-151T06
B2404	75003535	024AC5471S	CORE,BEADS	BLM18HD471SN1D
B2405	75003535	024AC5471S	CORE,BEADS	BLM18HD471SN1D
B2406	75003536	024AC5102S	CORE,BEADS	BLM18HD102SN1D
B2407	75003535	024AC5471S	CORE,BEADS	BLM18HD471SN1D
B2408	75003535	024AC5471S	CORE,BEADS	BLM18HD471SN1D
B2409	75003535	024AC5471S	CORE,BEADS	BLM18HD471SN1D
B2410	75003535	024AC5471S	CORE,BEADS	BLM18HD471SN1D
B2411	75003536	024AC5102S	CORE,BEADS	BLM18HD102SN1D
B2412	75003536	024AC5102S	CORE,BEADS	BLM18HD102SN1D
B2413	75003536	024AC5102S	CORE,BEADS	BLM18HD102SN1D
B2414	75003536	024AC5102S	CORE,BEADS	BLM18HD102SN1D
B2415	75003536	024AC5102S	CORE,BEADS	BLM18HD102SN1D
B2416	75003536	024AC5102S	CORE,BEADS	BLM18HD102SN1D
B2417	75003536	024AC5102S	CORE,BEADS	BLM18HD102SN1D
B2418	75003536	024AC5102S	CORE,BEADS	BLM18HD102SN1D
B2419	75003535	024AC5471S	CORE,BEADS	BLM18HD471SN1D
B2420	75003536	024AC5102S	CORE,BEADS	BLM18HD102SN1D
B2421	75003535	024AC5471S	CORE,BEADS	BLM18HD471SN1D
B2423	75003536	024AC5102S	CORE,BEADS	BLM18HD102SN1D
B2501	75003536	024AC5102S	CORE,BEADS	BLM18HD102SN1D
B3402	72783358	024HC16014	CORE,BEADS	HCB3216KF-601T20
B3403	72783357	024HC51513	CORE,BEADS	FCM1608KF-151T06
B3404	72783358	024HC16014	CORE,BEADS	HCB3216KF-601T20
B3405	72783358	024HC16014	CORE,BEADS	HCB3216KF-601T20
BT001	72783174	141U004016	BATTERY,MANGAN	MNAAA(R03)
BT002	72783174	141U004016	BATTERY,MANGAN	MNAAA(R03)
CD001	75003537	06CH292602	CORD,CONNECTOR	CH292602
CD002	72796903	06CU2C2501	CORD,CONNECTOR	CU2C2501
CD003	72795880	06CU2D3001	CORD,CONNECTOR	CU2D3001
⚠CD501	72799246	1209415909	CORD,AC BUSH	9415909
CD701	72783741	06CH242402	CORD,CONNECTOR	CH242402

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
			MISCELLANEOUS	
CD702	72796871	06CU012501	CORD,CONNECTOR	CU012501
CD703	75003538	06CH012405	CORD,CONNECTOR	CH012405
CD801	75003497	WCL6846038	FLAT CABLE	AWM2468 AWG26 5C GRAY 460MM
CD803	72794460	06CH823004	CORD,CONNECTOR	CH823004
CD805	72794460	06CH823004	CORD,CONNECTOR	CH823004
CD806	75003540	06CH013902	CORD,CONNECTOR	CH013902
CD810	75003541	06CH014001	CORD,CONNECTOR	CH014001
CD851	72794463	WBL6048038	FLAT CABLE	AWM2468 AWG26 4C BLACK 480MM
CD852	72794464	06CU232001	CORD,CONNECTOR	CU232001
CP001	72796804	069S290629	CONNECTOR PCB SIDE	A2001WV2-9P
CP002	72796809	069S2C0629	CONNECTOR PCB SIDE	A2001WV2-12P
CP003	72796810	069S2D0629	CONNECTOR PCB SIDE	A2001WV2-13P
CP004	72796825	069W01001A	CONNECTOR PCB SIDE	003P-2100
CP005	72796825	069W01001A	CONNECTOR PCB SIDE	003P-2100
CP101	72783364	069S280639	CONNECTOR PCB SIDE	A2001WR2-8P
CP102	72796801	069S270629	CONNECTOR PCB SIDE	A2001WV2-7P
⚠CP401	72782003	069X460109	CONNECTOR PCB SIDE	B06B-DVS-L_(LF)
CP402	72796792	069S120419	CONNECTOR PCB SIDE	A2502WV2-2P
CP403	72796080	069S220629	CONNECTOR PCB SIDE	A2001WV2-2P
⚠CP502	72796821	069S420110	CONNECTOR PCB SIDE	A1561WV2-2P
CP503	72796825	069W01001A	CONNECTOR PCB SIDE	003P-2100
CP507	72796825	069W01001A	CONNECTOR PCB SIDE	003P-2100
CP701	72796796	069S240629	CONNECTOR PCB SIDE	A2001WV2-4P
CP703	72796825	069W01001A	CONNECTOR PCB SIDE	003P-2100
CP803	72796816	069S320010	CONNECTOR PCB SIDE	A2361WV2-2P
CP805	72796816	069S320010	CONNECTOR PCB SIDE	A2361WV2-2P
CP806	72796767	069D010010	CONNECTOR PCB SIDE	005P-2100
CD1001	75002754	06CU147202	CORD,CONNECTOR	CU147202
CD802A	72783573	06CU276003	CORD,CONNECTOR	CU276003
CP1001	72796793	069S140419	CONNECTOR PCB SIDE	A2502WV2-4P
CP2403	72799043	069R2Y0700	CONNECTOR PCB SIDE	87760-3416
CP801A	72796751	067U005049	WIRE HOLDER	B2013H02-5P
CP801B	72796781	069R250589	CONNECTOR PCB SIDE	52147-0510
CP802B	72796801	069S270629	CONNECTOR PCB SIDE	A2001WV2-7P
CP851A	72796750	067U004029	WIRE HOLDER	B2013H02-4P
CP851B	72796780	069R240589	CONNECTOR PCB SIDE	52147-0410
CP852A	72796794	069S230629	CONNECTOR PCB SIDE	A2001WV2-3P
CP852B	72796749	067U003029	WIRE HOLDER	B2013H02-3P
EL0701	72797069	124116281A	EYE LET	XRY16X28BD
EL0702	72797070	124120301A	EYE LET	XRY20X30BD
EL1101	72797069	124116281A	EYE LET	XRY16X28BD
ELD201	72797070	124120301A	EYE LET	XRY20X30BD
⚠F501	72794493	081PC6R305	FUSE	51MS063L
⚠F502	72796952	0835A07005	MICRO FUSE	20N_7000FSW
⚠FB401	75003498	043730002F	TRANSFORMER,FLYBACK	FUH30T002
FH501	72794496	06710T0009	HOLDER,FUSE	EYF-52BCY
FH502	72794496	06710T0009	HOLDER,FUSE	EYF-52BCY
NR2402	72783385	110P4220M6	R,NETWORK	4D02WGJ0220TCE
NR2403	72783385	110P4220M6	R,NETWORK	4D02WGJ0220TCE
NR2404	72783385	110P4220M6	R,NETWORK	4D02WGJ0220TCE
NR2405	72783385	110P4220M6	R,NETWORK	4D02WGJ0220TCE
NR2406	72783385	110P4220M6	R,NETWORK	4D02WGJ0220TCE
NR2407	72783385	110P4220M6	R,NETWORK	4D02WGJ0220TCE
NR2408	72783385	110P4220M6	R,NETWORK	4D02WGJ0220TCE
NR2409	72783385	110P4220M6	R,NETWORK	4D02WGJ0220TCE
NR2410	72783385	110P4220M6	R,NETWORK	4D02WGJ0220TCE
NR2411	72783385	110P4220M6	R,NETWORK	4D02WGJ0220TCE
OS101	72783489	077A000027	REMOTE RECEIVER	ROM-V3138SY
⚠RY501	72798987	0560V20119	RELAY	ALKS321_M60
SP1001	72796049	070Y447001	SPEAKER	S0510F01
SP1002	72796049	070Y447001	SPEAKER	S0510F01
TH501	72795546	DF5EL3R0A0	DEGAUSS ELEMENT	ZPB45BL3R0A
TM101	72799186	076D0KK010	TRANSMITTER	ORT204N7404359-U
⚠TU001	72783398	0164100005	DIGITAL TUNER	ENG36A49KF
⚠V801	75003499	098T300C01	CRT W/DY	W76QEP270X56L
X103	72799226	100WT01611	CRYSTAL	HC-49/U-S
X601	72794704	100DT3R531	CRYSTAL	HC-49/U
X2401	72783399	100GA02402	CRYSTAL	B24576K010
X2402	72783400	100GA02502	CRYSTAL	B25000H006

ELECTRICAL REPLACEMENT PARTS LIST

RESISTOR

RC..... CARBON RESISTOR

CAPACITORS

CC..... CERAMIC CAPACITOR
CE..... ALUMI ELECTROLYTIC CAPACITOR
CP..... POLYESTER CAPACITOR
CPP..... POLYPROPYLENE CAPACITOR
CPL..... PLASTIC CAPACITOR
CMP..... METAL POLYESTER CAPACITOR
CMPL..... METAL PLASTIC CAPACITOR
CMPP..... METAL POLYPROPYLENE CAPACITOR

TOSHIBA CORPORATION
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